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OFFICIAL YEAR BOOK OF THE COMMONWEALTH

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,
MELBOURNE.

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OFFICIAL

YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA,

CONTAINING AUTHORITATIVE STATISTICS FOR THE PERIOD

1901-1913

AND CORRECTED STATISTICS FOR THE PERIOD 1788 TO 1900.

No. 7.—1914.

ISSUED UNDER THE AUTHORITY OF THE MINISTER OF STATE FOR HOME AFFAIRS

BY

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BY AUTHORITY.

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PREFACE.

By the Constitution of the Commonwealth of Australia, the Commonwealth is empowered "to make laws for the peace, order, and good government of the Commonwealth, with respect to," *inter alia*, "Census and Statistics." In exercising the power so conferred, a "Census and Statistics Act" was passed in 1905, and in the year following, the "Commonwealth Bureau of Census and Statistics" was created. The first Official Year Book was published early in 1908. The publication here presented is the seventh authoritative Year Book issued under the Federal Constitution.

This Year Book furnishes corrected statistics for the whole period of Australian settlement, viz., from 1788 to 1913. Wherever space has permitted, detailed statistics have been furnished for each year since Federation, viz., from 1901 to 1913. In the few instances where this has proved impracticable, reference will be necessary to Year Books Nos. 1 to 6. The inclusion, as stated, of the total available information in the more important branches of statistics enables this publication to be used wherever it is desired to make a comparative survey of the evolution of this portion of the British Empire. Not only are the results given for the Commonwealth as a whole, but also for each State therein.

The general arrangement of the publication, which has been widely commended, corresponds with that of previous issues, and is shewn in the synopsis on pp. xiii. to xxix. immediately following.

In addition, however, to what may be called purely statistical matter, each issue contains special articles dealing at length with some particular subject or subjects of more or less permanent interest. These cannot of course be repeated year after year, but usually a brief condensation is given in subsequent issues. Though many articles in Year Books Nos. 1 to 6 have been reduced to synopses or deleted, sufficient indication is given to enable the subject to be traced in previous issues.

The present issue of the Year Book contains several new features of interest. Among these may be mentioned an article on the salient features in the Geological History of Australia, with special reference to changes of climate. The section dealing with Labour and Industrial Statistics, a subject on which special and

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organised investigation has been carried out by the Bureau for the last two years, has been considerably expanded, and new and valuable tables have been introduced. The chapter on Local Government has been remodelled, and a more ready comparison may now be made of the various municipal functions in the several States. In the section dealing with "Miscellaneous" matters, the official reports of the Interstate conferences which were held early in 1914, have been included. Mention may also be made of the Bibliography of recent works on Australia appearing on page 12, which has been increased by the addition of an Index of works on special subjects of Australian interest. This will be found on page 13.

The subject matter throughout is dealt with, as far as possible, from the following points of view, viz.:—

(i.) The development of the individual States. (ii.) The progress of Australia as a whole from the earliest times. (iii.) The statistical comparison of Australia with other leading countries of the world.

The full text of the Commonwealth Constitution Act and Amendments appears on pages 16 to 39.

A feature of this publication is the use made of maps and diagrams. As a rule, facts can be properly appreciated only by the use of graphs, and the progress of events, the characteristics of growth and decline, can in general be grasped much more readily graphically than numerically. The diagram or "graph" is a direct picture in which the relative magnitudes are preserved and by which instantaneous comparisons of a wide range of facts are made possible at a glance. The statistical data, however, are also given *in extenso* numerically.

The development of Australia has been in many instances very remarkable, and this could be shewn only by tables and graphs dating back to its beginning in 1788. In most cases accurate data are not available for years much before 1860. In such cases, therefore, it seems sufficient at present to give continuous results from that year onwards.

The great mass of material embodied in each Year Book is always carefully examined, but it would be idle to hope that all error has been avoided. The Commonwealth Statistician desires to express appreciation of the opportunity afforded him of perfecting the matter of the Year Book, by those who have been kind enough to point out defects or make suggestions.

The corresponding years indicated in various sections of this book do not always necessarily refer to the same period, the year ending in some cases on 31st December, 30th June, or 31st March, etc. The precise period for which returns are given is indicated where necessary.

Recent information or returns which have come to hand since the various Sections were sent to press, may be found in the Appendix, p. 1063.

In conclusion, the Commonwealth Statistician desires to express his cordial thanks to the State Statisticians, to the responsible officers of the various Commonwealth and State Departments, and to others, who have kindly, and often at considerable trouble, supplied all desired information.

G. H. KNIBBS,

Commonwealth Statistician.

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

29th June, 1914.

INDEX TO SPECIAL ARTICLES, ETC., APPEARING IN PREVIOUS ISSUES.

These articles have appeared in former issues of the Commonwealth Year Book, but, owing to exigencies of space, they are not included in this publication.

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CORRIGENDA.

Page 243.—In table, year 1913, for South Australia "619,568" read "624,202[†]"; for Western Australia, "144,333" read "446,804"; for Tasmania, "49,206§" read "49,476§", and for Commonwealth "2,717,463" read "3,024,838."

Page 601.—For Government Railways, New South Wales, 4 ft. 8½ in. gauge, "3930" read "3890" miles; 3 ft. 6 in. gauge " ... " read "40" miles.

Page 604.—5th line from bottom of page, for "3930" read "3890".

STATISTICAL SUMMARY.

STATISTICAL SUMMARY FOR THE COMMONWEALTH, 1861-1912.

(Figures for 1913, where available, will be found in the Appendix, and, in some instances, have been incorporated in the succeeding sections.)

Heading.		Years.						
		1861.	1871.	1881.	1891.	1901.	1911.	1912.
Population	Males	669,373	928,918	1,247,059	1,736,617	2,004,836	2,377,920	2,466,968
	Females	498,776	771,970	1,059,677	1,504,368	1,820,077	2,190,787	2,266,391
	Total	1,168,149	1,700,888	2,306,736	3,240,985	3,824,913	4,568,707	4,733,359
Births	No.	48,908	63,625	80,004	110,187	102,945	122,193	133,088
	Rate	42.28	38.00	35.26	34.47	27.16	27.21	28.65
Deaths	No.	20,661	22,175	33,327	47,430	46,330	47,869	52,177
	Rate	17.34	13.24	14.69	14.84	12.22	10.66	11.23
Marriages	No.	10,000	11,623	17,244	23,862	27,753	39,482	42,147
	Rate	8.64	6.94	7.60	7.47	7.32	8.79	9.07
Agriculture								
	Area, acs.	704,431	1,279,778	3,002,064	3,335,528	5,115,965	7,427,894	7,339,651
Wheat	Yld., bshl.	10,236,549	11,917,741	21,443,862	25,675,265	38,561,619	71,636,347	91,981,070
	Av. "	14.53	9.31	7.14	7.70	7.54	9.64	12.53
	Area, acs.	129,738	225,492	194,816	246,129	461,430	616,857	874,284
Oats	Yld., bshl.	3,090,982	4,251,630	4,795,897	5,726,256	9,789,859	9,561,833	16,116,712
	Av. "	23.82	18.85	24.62	23.27	21.22	15.50	18.43
	Area, acs.	27,093	48,164	75,864	68,068	74,511	116,466	181,387
Barley	Yld., bshl.	507,879	726,158	1,353,380	1,178,560	1,519,819	2,056,836	3,859,116
	Av. "	18.75	15.08	17.84	17.31	20.40	17.68	21.28
	Area, acs.	61,178	142,078	165,777	284,428	294,849	340,065	314,936
Maize	Yld., bshl.	1,799,862	4,576,635	5,726,266	9,261,922	7,034,786	8,939,855	8,356,158
	Av. "	29.18	32.21	34.54	32.56	28.26	26.29	26.53
	Area, acs.	222,003	303,274	768,388	942,166	1,688,402	2,518,298	3,217,041
Hay	Yld., tons	298,184	375,871	767,194	1,067,255	2,024,608	2,867,973	3,955,311
	Av. "	1.34	1.24	1.00	1.13	1.20	1.14	1.23
	Area, acs.	47,338	67,911	76,265	112,884	109,685	130,463	128,889
Potatoes	Yld., tons	147,510	212,896	243,216	380,477	322,524	301,489	418,341
	Av. "	3.12	3.13	3.19	3.37	2.94	2.31	3.25
	Area, acs.	...	11,576	19,708	45,444	86,950	101,010	84,280
Sugar	Yld., tons	...	176,632	349,627	737,573	1,367,902	1,682,250	1,135,141
Cane	Av. "	...	15.25	17.74	16.23	15.73	16.65	13.47
	Area, acs.	7,010	16,253	14,570	48,882	63,677	60,602	62,388
Vineyards	Wine, gal	495,000	2,104,000	1,488,000	3,535,000	5,816,037	4,975,147	6,103,808
Total value all agricultural production	£	...	8,941,000	15,519,000	16,480,000	23,835,000	38,773,678	45,753,825
Pastoral, dairying, etc.								
	Sheep, No.	20,980,123	40,072,955	65,092,719	106,421,068	72,040,211	93,003,521	83,263,686
Live	Cattle	3,846,554	4,277,228	8,010,991	11,112,112	8,491,428	11,828,954	11,577,259
Stock	Horses	431,695	701,530	1,088,029	1,564,737	1,620,422	2,279,027	2,408,113
	Pigs	319,147	586,017	703,188	845,888	931,309	1,110,721	845,255
	Wool prod., lb. greasy	...	179,000,000	332,759,000	631,587,000	543,131,661	726,408,625	648,851,913
	Butter product'n, lbs.	...	...	...	47,433,564	101,671,066	211,573,745	187,194,161
	Cheese	...	...	...	19,146,929	11,575,692	15,886,712	16,160,491
	Bacon and ham	...	...	...	...	34,020,629	53,264,652	54,192,175
Total estimated value of pastoral and dairying production	£	...	20,736,000	29,538,000	39,256,000	36,890,000	69,832,000	71,895,000
Mineral production—								
	Gold...	£ 9,950,000	7,239,106	5,194,390	5,281,861	14,005,732	10,551,624	9,879,928
	Silver and lead ...	£ 5,702	29,488	31,139	3,717,825	2,367,687	3,021,284	4,219,013
	Copper ...	£ 458,758	824,111	673,786	362,745	2,238,590	2,564,278	3,241,550
	Tin ...	£ 11,937	18,597	1,145,603	560,750	432,576	1,209,973	1,248,992
	Zinc ...	£ ...	...	2,622	6,028	4,057	1,415,169	1,766,459
	Coal ...	£ 228,935	325,747	626,746	1,908,028	2,602,770	3,929,678	4,418,025
Total value all mineral production	£	10,557,533	8,484,728	7,613,523	12,093,837	22,043,104	23,480,211	25,629,238
Forestry production—								
	Quantity of local timber sawn or hewn sup. ft.	...	...	...	...	452,131,252	591,645,786	667,554,093
Manufactories—†								
	No. of factories	...	...	...	...	...	14,455	14,878
	Hands employed	...	...	...	...	...	311,710	327,456
	Wages paid	...	...	...	...	...	27,528,371	31,887,492
	Total value of output	£ ...	...	...	...	...	133,022,090	148,775,407
	Value added in process of manufac.	£ ...	...	...	...	...	54,017,714	60,499,787

* Partly estimated 1861, 1871, and 1881. † Owing to variation in classification and lack of information effective comparison is impossible ‡ Information not available. § Area of productive cane. || Season ended 30th June, year following.

STATISTICAL SUMMARY FOR THE COMMONWEALTH—(continued).

Heading.	Years.						
	1861.	1871.	1881.	1891.	1901.	1911.	1912.
Shipping—							
Oversea vessels { No. 2,466 2,748 3,284 3,778 4,025 4,174 4,061 ent. & cleared { ton. 1,149,476 1,312,642 2,549,364 4,726,307 6,541,991 9,984,801 10,310,779							
Commerce—							
Imports oversea £ 17,651,000 17,017,000 29,067,000 37,711,000 42,431,000 66,967,488 78,158,600 " per head £ 15/5/2 10/3/3 12/16/2 11/16/0 11/3/11 14/18/3 16/16/7							
Exports oversea £ 17,413,000 21,725,000 27,528,000 36,043,000 49,696,000 79,482,258 79,096,090 " per head £ 15/1/1 12/19/6 12/2/8 11/5/6 13/2/2 17/14/1 17/0/7							
Total oversea trade £ 35,064,000 38,742,000 56,595,000 73,754,000 92,130,000 146,449,746 157,254,690 " per head £ 30/6/3 23/2/9 24/18/10 23/1/6 24/6/1 32/12/4 33/17/2							
Customs and excise duties ... £ ... 4,809,326 7,440,869 8,656,530 13,515,005 15,591,324 " per head, £ ... 2/2/5 2/2/5 2/5/8 3/0/2 3/7/2							
Principal Oversea Exports—							
Wool { lbs. (greasy) 60,367,492 176,635,820 328,369,169 619,239,753 518,018,134 720,364,903 689,570,121 " bushels £ 5,005,799 9,459,629 13,173,026 19,940,029 15,237,454 26,071,193 26,325,378							
Wheat { 87,249 799,924 5,364,653 9,794,791 20,260,058 55,147,840 32,604,247 " tons £ 24,041 193,732 1,189,762 1,998,864 2,774,643 9,641,608 6,403,237							
Flour { £ 7,602 12,958 49,549 33,383 96,811 175,881 168,084 " lbs. £ 113,172 170,415 519,635 328,428 589,604 1,591,529 1,456,668							
Butter { £ 664,160 1,612,688 1,298,758 4,239,494 34,907,397 101,722,136 66,679,120 " lbs. £ 21,692 45,513 39,333 206,568 1,451,168 4,637,362 3,342,320							
Skins and hides... £ 180,292 100,123 316,878 873,695 1,250,938 3,327,236 4,239,041							
Tallow ... £ 148,201 914,379 644,149 571,069 677,745 1,936,599 1,548,134							
Meats ... £ 37,575 566,780 362,965 460,594 2,611,244 4,307,273 4,567,808							
Timber (undressed) £ 32,387 45,586 118,117 38,448 731,301 1,028,960 857,209							
Gold ... £ 9,957,056 7,184,833 6,445,365 5,703,532 14,315,741 12,045,766 12,377,137							
Silver and lead ... £ 4,237 37,891 67,954 1,932,278 2,250,353 3,724,720 3,759,741							
Copper ... £ 381,718 598,538 676,515 417,697 1,619,145 2,349,443 3,174,538							
Coal... £ 63,061 134,355 361,081 645,972 986,357 900,622 1,147,013							
Railways—							
Length of line open, mls 205 970 3,832 9,541 12,577 16,079 16,898							
Capital cost ... £ 6,654,516 19,269,786 42,741,350 99,764,090 123,587,000 152,896,000 161,645,000							
Gross revenue ... £ 318,823 1,102,650 3,910,122 8,654,085 11,038,000 17,848,000 19,101,000							
Working expenses £ 234,040 608,332 2,141,735 5,630,182 7,149,000 11,054,000 12,471,000							
Per cent. of work'g expenses on earnings% 73.41 55.17 54.77 65.06 64.76 61.94 65.29							
Postal—							
Letters and postcards dealt with ... No. 12,844,000 24,382,000 67,640,000 157,297,000 220,853,000 453,888,000 479,673,000							
" per head .. 11.13 14.54 29.61 49.07 58.26 101.1 103.3							
Newspapers dealt with ... No. 9,603,000 13,336,000 38,063,000 85,280,000 102,727,000 139,604,000 138,170,000							
" per head .. 8.32 7.95 16.66 26.61 27.10 31.1 29.7							
Cheque-paying Banks—							
Note circulation £ 2,970,357 2,456,487 3,978,711 4,417,269 3,406,175 4,876,428 425,413							
Coin & bullion held £ 4,662,415 6,168,869 9,108,243 16,712,923 16,737,572 30,024,225 27,036,792							
Advances ... £ 18,261,129 26,039,573 57,732,824 129,741,583 81,167,499 116,769,133 120,042,107							
Deposits ... £ 13,817,435 21,856,959 53,849,455 98,345,338 90,965,530 147,103,081 148,573,650							
Savings Banks—							
Number of depositors 27,877 100,713 250,070 614,741 964,553 1,600,112 1,833,349							
Total deposits ... £ 1,320,739 3,193,285 7,854,480 15,536,592 30,882,615 39,393,382 70,547,932							
Aver. per depositor £ 47/7/7 31/14/2 31/8/2 25/5/6 32/0/4 37/2/4 38/9/7							
" per head of population ... £ 0/18/8 1/18/9 3/10/5 4/18/7 8/4/0 13/8/5 14/8/1							
State Schools—							
Number of schools 1,864 2,502 4,494 6,231 7,013 8,060 8,350							
Teachers ... No. 2,471 4,641 9,028 12,564 13,500 16,971 18,518							
Enrolment 106,049 236,710 492,320 561,153 638,478 638,850 662,572							
Aver. attendance .. 73,446 137,767 255,143 350,773 430,246 463,799 446,252							

† Decrease due to issue of Australian notes.

CHRONOLOGICAL TABLE.

CHRONOLOGICAL TABLE OF CHIEF EVENTS SINCE THE ESTABLISHMENT OF SETTLEMENT IN AUSTRALIA.

NOTE.—The Government was centralised in Sydney, New South Wales, up to 1825, when Tasmania (Van Diemen's Land) was made a separate colony. In the Table, the names now borne by the States serve to indicate the localities.

Year.

- 1788 N.S.W.—Arrival of "First Fleet" at Botany Bay. Land in vicinity being found unsuitable for settlement, the expedition moved to Sydney Cove (now Port Jackson). Formal possession of Port Jackson, taken by Captain Phillip on 26th January. Formal proclamation of colony on 7th February. Population, 1024. Branch settlement established at Norfolk Island. French navigator La Pérouse visits Botany Bay. First cultivation of wheat and barley. First grape vines planted.
- 1789 N.S.W.—First wheat harvest at Parramatta, near Sydney. Discovery of Hawkesbury River. Outbreak of small-pox amongst aborigines.
- 1790 N.S.W.—"Second Fleet" reached Port Jackson. Landing of the New South Wales Corps. Severe suffering through lack of provisions. First Circumnavigation of Australia by Lieut. Ball.
- 1791 N.S.W.—1st Exploration Map of Australia published. Arrival of "Third Fleet." Territorial seal brought by King.
- 1792 N.S.W.—Visit of *Philadelphia*, first foreign trading vessel. Population, 4203.
- 1793 N.S.W.—First free immigrants arrived in the *Bellona*. First Australian Church opened at Sydney. Tas.—D'Entrecasteaux discovered the Derwent River.
- 1794 N.S.W.—Establishment of Settlement at Hawkesbury River.
- 1795 N.S.W.—Erection of the first printing press at Sydney. Descendants of strayed cattle discovered at Cowpastures, Nepean River.
- 1796 N.S.W.—First Australian Theatre opened at Sydney. Coal discovered by fishermen at Newcastle.
- 1797 N.S.W.—Introduction of merino sheep from Cape of Good Hope.
- 1798 Tas.—Tasmania proved an island by voyage of Bass and Flinders.
- 1800 N.S.W.—First export of coal. First Custom House in Australia established at Sydney. Flinders' Charts published. First issue of copper coin. Population, 5995.
- 1801 N.S.W.—First colonial manufacture of blankets and linen.
- 1802 Vic.—Discovery of Port Phillip by Lieut. Murray. S.A.—Discovery of Spencer's and St. Vincent Gulfs by Flinders. Q'land.—Discovery of Port Curtis and Port Bowen by Flinders.
- 1803 N.S.W.—First Australian wool taken to England by Capt. Macarthur. Issue of "The Sydney Gazette," first Australian newspaper. Vic.—Attempted colonisation of Port Phillip by Collins. Discovery of Yarra by Grimes. Tas.—First settlement formed at Risdon by Lieut. Bowen.
- 1804 N.S.W.—Insurrection of convicts at Castle Hill. Vic.—Abandonment of settlement at Port Phillip. Tas.—Foundation of settlement at Hobart by Collins, and at Yorktown by Colonel Paterson.
- 1805 N.S.W.—First extensive sheep farm established at Camden by Capt. Macarthur. Portion of settlers from Norfolk Island transferred to Tasmania.
- 1806 N.S.W.—Shortage of provisions, and floods. Tas.—Settlement at Launceston.
- 1807 N.S.W.—Final shipment of convicts from Norfolk Island. First shipment of merchantable wool (245 lbs.) to England.
- 1808 N.S.W.—Deposition of Governor Bligh.
- 1810 N.S.W.—First post-office established at Sydney. First Race Meeting in Australia at Hyde Park, Sydney. Population, 11,590. Tas.—First Tasmanian newspaper printed.
- 1813 N.S.W.—Passage across Blue Mountains discovered by Wentworth, Lawson, and Blaxland. Macquarie River discovered by Evans.

- 1814 N.S.W.—Australia, previously known as “New Holland,” received present name on recommendation of Flinders. Creation of Civil Courts. Appointment of Mr. Kendall as Resident Magistrate in New Zealand.
- 1815 N.S.W.—Town of Bathurst founded by Governor Macquarie. First steam engine in Australia erected at Sydney. Lachlan River discovered by Evans. Tas.—Arrival of first immigrant ship with free settlers. First export of wheat to Sydney. Port Davey and Macquarie Harbour discovered by Captain Kelly.
- 1816 N.S.W.—Botanic Garden formed at Sydney.
- 1817 N.S.W.—Oxley’s first exploration inland. Discovery of Lakes George and Bathurst and the Goulburn Plains by Meehan and Hume. First bank in Australia opened at Sydney. Tas.—Great prosperity in wool and whaling industries.
- 1818 N.S.W.—Cessation of free immigration. Oxley discovers Liverpool Plains, and the Peel, Hastings, and Manning Rivers. Port Essington discovered by Captain King.
- 1819 N.S.W.—Opening of first Australian Savings Bank at Sydney.
- 1820 N.S.W.—Foundation of Campbelltown. Clyde River discovered by Lieut. Johnson. Tas.—First importation of pure merino sheep.
- 1821 N.S.W.—Foundation of Philosophical (now Royal) Society. Population, 35,610. Tas.—Establishment of penal settlement at Macquarie Harbour. First Circuit Court held at Hobart.
- 1822 N.S.W.—Formation of Agricultural Society of N.S.W.
- 1823 N.S.W.—First Australian Constitution. Discovery of gold at Fish River by Assistant-Surveyor McBrien. Arrival in Sydney of Dr. John Dunmore Lang. Qld.—Oxley discovers Brisbane River.
- 1824 N.S.W.—Becomes a Crown Colony. Executive Council formed. Establishment of Supreme Court at Sydney, and introduction of trial by jury. First Australian Enactment (Currency Bill) passed by the Parliament at Sydney. Proclamation of freedom of the press. First land regulations. First manufacture of sugar. Hume and Hovell’s overland expedition to the south. Vic.—Hume and Hovell, journeying overland from Sydney, arrive at Corio Bay. Qld.—Penal settlement founded at Moreton Bay (Brisbane). Fort Dundas Settlement formed at Melville Island, N. Terr.
- 1825 Tas.—Proclamation of Independence of Van Diemen’s Land (Tasmania) and appointment of a nominated Legislative Council for the new colony.
- 1826 N.S.W.—Illawarra founded by Captain Bishop. Vic.—Settlement at Corinella, Western Port, formed by Captain Wright. W.A.—Military Settlement founded at King George’s Sound, Albany, by Major Lockyer.
- 1827 N.S.W.—Colony becomes self-supporting. Feverish speculation in land and stock. Qld.—Darling Downs and the Condamine River discovered by Allan Cunningham. Fort Wellington established at Raffles Bay. N. Terr. Tas.—Copper ore discovered at Macquarie Harbour.
- 1828 N.S.W.—Second Constitution. First Census. Sturt’s expedition down Darling River. Cotton first grown in Sydney Botanical Gardens. Gas first used at Sydney. Richmond and Clarence Rivers discovered by Captain Rous. Vic.—Abandonment of settlement at Western Port. Qld.—Cunningham discovers a route from Brisbane to the Darling Downs, and explores Brisbane River to its source. Tas.—First land sales.
- 1829 N.S.W.—Sturt’s expedition down Murrumbidgee River. New South Wales Act proclaimed. All English law, so far as circumstances of the Colony allowed, came into force. W.A.—Foundation of settlement at Swan River, under command of Lieut.-Governor Stirling. Perth also founded.
- 1830 N.S.W.—Insurrection of convicts at Bathurst. Sturt, voyaging down Murrumbidgee and Murray Rivers, arrives at Lake Alexandrina. Qld.—Murder of Captain Logan by convicts at Brisbane. W.A.—First Executive Council appointed. Tas.—Trouble with natives. Black line organised to force aborigines into Tasman’s Peninsula, but failed. Between 1830 and 1835, however, George Robinson, by friendly suasion, succeeded in gathering the small remnant of aborigines (203) into settlement at Flinders Island.

- 1831 N.S.W.—Crown lands first disposed of by public competition. Mitchell's explorations north of Liverpool Plains. Arrival at Sydney of first steamer, *Sophia Jane*, from England. S.S. *Surprise*, first steamship in Australia, launched at Sydney. First coal shipped from Australian Agricultural Company's workings at Newcastle, N.S.W. First assisted immigration to N.S.W. S.A.—Adelaide District discovered by Captain Barker. Murder of Barker by aborigines at Lake Alexandrina. Wakefield's first colonisation committee. W.A.—Appointment of Executive and Legislative Council. First newspaper—"Fremantle Observer." Lord Ripon's land regulations in N.S.W., W.A., and Tas.
- 1832 N.S.W.—Savings Bank of N.S.W. established.
- 1833 N.S.W.—First School of Arts established at Sydney.
- 1834 N.S.W.—First settlement at Twofold Bay. Vic.—Settlement formed at Portland Bay by Henty Bros. Qld.—Leichhardt reached Gulf of Carpentaria. S.A.—Formation of the South Australian Association. Imperial Act Colonisation of S.A. W.A.—Severe reprisals against natives at Pinjarrah.
- 1835 N.S.W.—Establishment of depôt at Fort Bourke on the Darling River, by Mitchell. Vic.—John Batman's arrival at Port Phillip; makes treaty with the natives for 600,000 acres of land; claim afterwards disallowed by Imperial Government. John Pascoe Fawkner founds Melbourne on site previously selected by Batman.
- 1836 N.S.W.—Fall of snow in Sydney. Mitchell's overland journey from Sydney to Cape Northumberland, Vic., and discovery of "Australia Felix." "Squatting" formally recognised. Vic.—Proclamation of Port Phillip district as open for settlement. Captain Lonsdale first Resident Magistrate. S.A.—Founding of settlement at Adelaide under Governor Hindmarsh.
- 1837 N.S.W.—Appointment in London of Select Committee on Transportation. Heavy snowfall near Sydney. Vic.—Melbourne planned and named by Governor Bourke. First Victorian post-office established in Melbourne. First sale of Crown lands in Melbourne. First overlanders from Sydney arrived at Port Phillip. S.A.—Adelaide planned by Captain Light. First newspaper published at Adelaide. First sale of Crown lands in Adelaide.
- 1838 N.S.W.—Discontinuance of assignment of convicts. Drought and failure of crops. Frenzied speculation. Vic.—First Victorian paper published at Melbourne. Qld.—Settlement of German missionaries at Brisbane. S.A.—"Overlanding" of cattle from Sydney to Adelaide along the Murray route by Hawden and Bonney. Settlement at Port Essington, Northern Territory, formed by Captain Bremer. W.A.—Glenelg River discovered by Captain Grey.
- 1839 N.S.W.—Finding of gold at Vale of Clwydd by Count Strzelecki. Vic.—Appointment of Mr. C. J. LaTrobe as Superintendent Port Phillip district. S.A.—Lake Torrens discovered by Eyre. Port Darwin, Northern Territory, discovered by Captain Stokes. W.A.—Murchison River discovered by Captain Grey.
- 1840 N.S.W.—Abolition of transportation to New South Wales. Land regulations—proceeds of sales to be applied to payment for public works and expenditure on immigration. Foundation of viticultural industry. Monetary crisis. Vic.—Determination of northern boundary. Colonists desire separation from New South Wales. Qld.—Breaking up of penal settlements and throwing open of Moreton Bay district to free settlers. S.A.—Incorporation of Adelaide. Eyre begins his overland journey from Adelaide to King George's Sound. Tas.—Visit of the *Erebus* and *Terror* to Hobart. Dr. Hooker investigates the island flora.
- 1841 N.S.W.—Gold found near Hartley by Rev. W. B. Clarke. Separation of New Zealand. W.A.—Completion of Eyre's overland journey from Adelaide to King George's Sound. Tas.—Renewal of transportation.
- 1842 N.S.W.—Incorporation of Sydney. Vic.—Incorporation of Melbourne. S.A.—Discovery of copper at Kapunda.
- 1843 N.S.W.—First Representative Constitution. First manufacture of tweed. Financial crisis. Qld.—Moreton Bay granted legislative representation. Tas.—Agitation against further introduction of convicts.

- 1844 S.A.—Sturt's last expedition inland. Qld.—Leichhardt's expedition from Condamine River to Port Essington, Northern Territory. Arrived following year.
- 1845 N.S.W.—Mitchell's explorations on the Barcoo. Qld.—Explorations by Mitchell and Kennedy. S.A.—Discovery of the Burra copper deposits. Sturt discovered Cooper's Creek. W.A.—First steam vessel (*H.M.S. Driver*) visited Fremantle.
- 1846 N.S.W.—Mr. Gladstone proposed to revive transportation. Initiation of meat preserving. Qld.—Foundation of settlement at Port Curtis. S.A.—Proclamation of North Australia. W.A.—Organisation of first mining company. Foundation of New Norcia Mission.
- 1847 N.S.W.—Crown Land Leases Act. Opening of iron smelting works near Berrima. Overland mail established between Sydney and Adelaide. Vic.—Melbourne created a City by Royal Letters Patent. Qld.—Explorations by Leichhardt, Burnett and Kennedy. W.A.—Issue of regulations for leasing Crown lands. First export of guano.
- 1848 N.S.W.—Attempts to revive transportation. Influx of Chinese. Vic.—Earl Grey returned as Melbourne member of the Legislative Council. Qld.—Leichhardt's last journey. Kennedy speared by the blacks at York Peninsula. Chinese brought in as shepherds. W.A.—Copper and lead discovered in the Champion Bay district by the Messrs. Gregory.
- 1849 N.S.W.—Indignation of colonists at arrival of convict ship *Hashemy*. Exodus of population to goldfields of California. Vic.—Outburst of indignation at arrival of *Randolph* with convicts. Qld.—Assignment of convicts per *Hashemy* to squatters on Darling Downs. W.A.—Commencement of transportation to Western Australia.
- 1850 N.S.W.—Final abolition of transportation. First sod of first Australian railway turned at Sydney. Vic.—Gold discovered at Clunes by Hon. W. Campbell. Representative government granted. S.A.—Representative government granted. W.A.—Pearl oysters found by Lieut. Helpman at Saturday Island Shoal. Tas.—Representative government granted. Discovery of coal at the Don and Mersey.
- 1851 N.S.W.—Payable gold discovered by Hargraves, at Lewis Ponds and Summerhill Creeks. Telegraph first used. Vic.—Separation of Port Phillip—erected into independent colony under the name of Victoria. Discovery of gold in various localities. "Black Thursday," Feb. 6th, a day of intense heat, when several persons died and a vast amount of damage to property was occasioned by fires. Qld.—Agitation for separation from New South Wales. S.A.—Financial depression. Tas.—Serious exodus of population to goldfields on mainland. W.A.—Proclamation of Legislative Council Act.
- 1852 N.S.W.—Destruction of Gundagai by flood—77 lives lost. Arrival of the *Chusan*, first P. and O. mail steamer from England. S.A.—First steamer ascends the Murray River to the junction with the Darling. Tas.—Meeting of first elective Council protests against transportation. Payable gold discovered at The Nook, near Fingal, and at Nine Mile Springs.
- 1853 Tas.—Abolition of transportation.
- 1854 N.S.W.—Russian war-scare and volunteer movement. Vic.—Opening of first Australian railway—Flinders Street to Port Melbourne. Riots on Ballarat goldfields. Storming of the Eureka Stockade, Dec. 3rd.
- 1855 N.S.W.—Opening of railway—Sydney to Parramatta. Introduction of responsible Government. Vic.—Proclamation of Constitution. Qld.—Gregory's expedition in search of Leichhardt. Tas.—Responsible government.
- 1856 N.S.W.—First elective Parliament. Pitcairn Islanders placed on Norfolk Island, which was placed under jurisdiction of Governor of New South Wales. Vic.—First Parliament under responsible government. S.A.—Responsible government. Tas.—First Parliament under responsible government. W.A.—A. C. Gregory's expedition in search of Leichhardt.
- 1857 N.S.W.—Heavy floods. Wreck of the *Dunbar* (119 lives lost), and *Catherine Adamson* (21 lives lost), at Sydney Heads. Select Committee on Federation. Vic.—Manhood suffrage. S.A.—First Parliament under responsible government. Exploration by Babbage and Warburton. Passage of Torrens' Real Property Act.

- 1858 N.S.W.—Establishment of manhood suffrage and vote by ballot. Telegraphic communication between Sydney, Melbourne and Adelaide. S.A.—Stuart's explorations. Qld.—The Canoona gold rush.
- 1859 Qld.—Proclamation of Queensland as separate colony. Tas.—First submarine cable, via Circular Head and King Is., to Cape Otway.
- 1860 N.S.W.—Disastrous floods on the Shoalhaven and at Araluen. Vic.—Burke and Wills left Melbourne on their journey across Continent. Qld.—First Parliament under responsible government. S.A.—Copper discoveries at Wallaroo and Moonta.
- 1861 N.S.W.—Anti-Chinese riots at Lambing Flat and Burrangong goldfields. Opening of first tramway in Sydney—cars drawn by horses. Robertson's Land Acts. Messrs. Parkes and Dalley proceed to London as emigration lecturers. Regulation of Chinese immigration. Vic.—Conference of Statisticians, Melbourne. Burke and Wills perish at Cooper's Creek, near Innamincka, S.A. W.A.—Exploration of F. Gregory in the North-west.
- 1862 N.S.W.—Raid by bushrangers on the Lachlan gold escort (£14,000 taken). Abolition of State aid to religion. Real Property Act. Vic.—C. Gavan Duffy's Land Act. Qld.—McKinlay's explorations. Heavy floods on Fitzroy River. S.A.—Stuart crosses the Continent from south to north. W.A.—Severe floods—damage to property, £30,000. First export of pearl-shell.
- 1863 N.S.W.—Bathurst and Canowindra "held up" by bushranger Gilbert. Vic.—Inter-colonial conference at Melbourne. S.A.—Taking over of the Northern Territory. W.A.—Initiation of settlement in the North-west district. Establishment of Post Office (now Government) Savings Bank.
- 1864 N.S.W.—Frequent outrages by bushrangers. Qld.—First railway begun. First sugar made from Queensland cane. Opening of first railway. W.A.—Messrs. Panton, Harding and Goldwyer, murdered by natives. Tas.—First successful shipment of English salmon ova.
- 1865 N.S.W.—Destruction by fire of St. Mary's Cathedral, Sydney.
- 1866 N.S.W.—Passage of Public Schools Act of (Sir) Henry Parkes. Vic.—Political deadlock. Qld.—Financial crisis. S.A.—Introduction of camels for exploration, etc.
- 1867 Vic.—Imposition of protective tariff. Qld.—Discovery of gold at Gympie.
- 1868 N.S.W.—Attempted assassination of the Duke of Edinburgh at Clontarf, near Sydney. Qld.—Passage of Act to regulate island labour traffic. W.A.—Arrival of the *Hougoumont*, last convict ship. Tas.—First sod of first railway (Launceston and Western) turned by Duke of Edinburgh.
- 1869 N.S.W.—Establishment of Eskbank Iron Company. Vic.—Reduction of property qualification for members and electors of Legislative Council. W.A.—Opening of first telegraph line, from Perth to Fremantle. Tas.—Opening of second cable.
- 1870 N.S.W.—Opening of Intercolonial Exhibition at Sydney in celebration of centenary of Cook's landing in Australia. Withdrawal of Imperial troops. Vic.—Inter-colonial Congress at Melbourne. S.A.—Commencement of trans-continental telegraph. W.A.—Meeting of first Legislative Council under Responsible Government.
- 1871 N.S.W.—Permanent military force raised. Vic.—Increase of protective duties. Qld.—Foundation of Queensland National Bank. W.A.—Passage of Elementary Education Act. Forrest's explorations. Tas.—Discovery of tin at Mount Bischoff. Launceston-Western railway opened for traffic.
- 1872 N.S.W.—International Exhibition at Sydney. Death of W. C. Wentworth. Qld.—Discovery of tin at Stanthorpe, copper at Mt. Perry, coal at Wide Bay, gold at the Palmer. S.A.—Cable from Java to Port Darwin. Completion of transcontinental telegraph line. W.A.—Cyclonic storms—destruction of town of Roeburne. Tas.—Completion of direct telegraphic communication with England.
- 1873 N.S.W.—Intercolonial Conference at Sydney. First volunteer encampment. Inauguration of mail service with San Francisco. W.A.—Warburton crosses from transcontinental telegraph line to head of De Grey River.

- 1874 N.S.W.—Triennial Parliaments Act passed. Intercolonial Conference. Qld.—Dalrymple's discoveries on north-eastern seaboard. S.A.—Adelaide University founded. W.A.—Explorations by E. Giles. John and Alexander Forrest arrived at Overland Telegraph from Murchison.
Fiji Islands ceded to Great Britain.
- 1875 Qld.—Transfer of Port Albany Settlement to Thursday Island. S.A.—Wreck of the *Gothenburg*—Judge Wearing and other well-known Adelaide citizens drowned. Education Act passed. Explorations by Giles, Gosse, and Warburton. Tas.—Conference of Statisticians, Hobart.
- 1876 N.S.W.—Completion of cable—Sydney (La Perouse) to Wellington (Wakapuaka). Vic.—Members of Legislative Assembly increased to 86. W.A.—Violent gale at Exmouth Gulf, number of pearling vessels wrecked, 69 lives lost. Giles crosses colony from east to west. Tas.—Death of Truganini, last representative of Tasmanian aborigines.
- 1877 Vic.—Deadlock on question of payment to members. W.A.—Opening of telegraphic communication with South Australia. Tas.—Discovery of rich gold-bearing quartz reef at Beaconsfield.
- 1878 N.S.W.—Seamen's strike. Vic.—Visit to England of Victorian delegation *re* alteration of Victorian Constitution. "Black Wednesday"—wholesale dismissal of civil servants. Qld.—Restriction of Chinese immigration.
- 1879 N.S.W.—First artesian bore at Killara. International Exhibition at Garden Palace, Sydney. First steam tramway. First issue of silver coin from Mint. W.A.—Celebration of 50th anniversary of foundation of colony. A. Forrest's explorations in the Kimberley district, and discovery of the Fitzroy pastoral country.
- 1880 N.S.W.—Public Instruction Act passed. Sydney streets partially wood-paved. Vic.—Opening of first Victorian International Exhibition at Melbourne. Federal Conference, at Melbourne and Sydney.
- 1881 N.S.W.—Further restrictions on Chinese immigration. Women admitted as students at University. Vic.—Reduction of property qualification for members and electors of Legislative Council, number of members increased to 42. W.A.—Cyclone near Roeburne wrecks number of pearling vessels. On the Ashburton, 1000 sheep destroyed by cyclone.
First simultaneous Australian Census, population 2,250,194. Visit to Australia of T.R.H. Prince Albert Victor and Prince George of Wales.
- 1882 N.S.W.—Garden Palace destroyed by fire. W.A.—Nugget of gold found between Roeburne and Cossack.
- 1883 N.S.W.—Discovery of silver at Broken Hill. Completion of railway between New South Wales and Victoria. Qld.—Annexation of New Guinea—repudiated by Imperial authorities.
Federal Conference held at Sydney. Federal Council created.
- 1884 N.S.W.—Land legislation restricting sales by auction. Vic.—Appointment of First Public Service Board. W.A.—Stockdale's explorations.
Federation Bill passed in Victoria. Similar measure rejected in New South Wales. British protectorate declared over New Guinea.
- 1885 N.S.W.—Military contingent sent to the Soudan. Opening of the Broken Hill Proprietary Silver Mines. Qld.—Agitation for division of the colony. W.A.—Gold found by prospectors on the Margaret and Ord Rivers in the Kimberley district. Tas.—Silver-lead discovered at Mount Zeehan.
- 1886 N.S.W.—Industrial depression. Wreck of the *Ly-ee-Moon*, *Coringamite*, and *Helen Nicol*. S.A.—Celebration of jubilee of foundation of colony. W.A.—Proclamation of Kimberley goldfields. Tas.—Discovery of gold and copper at Mount Lyell.
First session of Federal Council met at Hobart on the 26th January.
- 1887 N.S.W.—Disaster at Bulli coal mine (81 lives lost). Peat's Ferry (Hawkesbury River) railway accident. S.A.—International Exhibition at Adelaide. W.A.—Cyclone destroyed nearly the whole pearling fleet off the Ninety-Mile Beach—200 lives lost. Gold discovered at Yilgarn and Southern Cross.
Australasian Conference in London. Australasian Naval Defence Force Act passed.

- 1888 N.S.W.—Destructive bush fires. Centennial celebrations. Restrictive legislation against Chinese. Imposition of poll-tax of £100. Strike of coal-miners at Newcastle. Vic.—Second Victorian International Exhibition held at Melbourne. Members of Legislative Council increased to 48, and of Assembly to 95. Qld.—Railway communication opened between Sydney and Brisbane. W.A.—Favenc's explorations.
Centenary of first settlement in Australia. Conference of Australian Ministers at Sydney to consider question of Chinese immigration. First meeting of the Australasian Association for the Advancement of Science held in Sydney. Imperial Defence Act passed.
- 1889 N.S.W.—Destructive floods, Hunter River. Qld.—Direct railway communication established between Brisbane and Adelaide. W.A.—Framing of new Constitution.
- 1890 N.S.W.—Strike at Broken Hill. Maritime and shearers' strikes. Payment of members of Parliament. Destructive bush fires. Qld.—Wreck of the *Quetta*—146 lives lost. Floods and hurricanes. Industrial depression. W.A.—Granting of responsible government. Tas.—Opening of University.
Meeting at Melbourne of Australasian Federation Conference. Pre-censal Conference of Statisticians at Hobart.
- 1891 N.S.W.—Election to Legislative Assembly of 35 Labour members. Arrival of Australian Auxiliary Squadron. Collapse of several building societies. Cessation of assisted immigration. Death of Sir John Robertson. W.A.—Discovery of gold on the Murchison.
Federal Convention in Sydney, draft bill framed and adopted. Second simultaneous Australian census. Population, 3,174,392.
- 1892 N.S.W.—Broken Hill miners' strike. Run on Government Savings Bank. Opening of Women's College, Sydney University. Vic.—Suspension of Railway Commissioners. W.A.—Discovery of gold by Messrs. Bayley and Ford at Coolgardie.
- 1893 N.S.W.—Departure by the *Royal Tar* of colonists for "New Australia." Electoral Act—"One man one vote." Direct communication, Sydney to Vancouver, established. Financial crisis, chiefly affecting the eastern States.
- 1894 N.S.W.—Shearers' strike. S.A.—Adult Suffrage Bill assented to. Industrial depression.
- 1895 N.S.W.—Crown Lands Act of 1895. Death of Governor Sir R. Duff. Free-trade tariff. Land and income taxes.
Conference of Premiers at Hobart *re* Federation.
- 1896 N.S.W.—Death of Sir Henry Parkes. Re-organisation of Public Service. People's Federal Convention at Bathurst. S.A.—Departure of Calvert expedition.
- 1897 S.A.—Floods and storms at Adelaide. Death of Sir Thomas Elder. Earthquake and hurricane in Northern Territory. Town of Palmerston destroyed.
- 1897-8 Sessions of Federal Convention at Adelaide, Sydney and Melbourne.
- 1898 N.S.W.—First surplus of wheat for export.
Draft Federal Constitution Bill submitted to electors in Victoria, New South Wales, South Australia, and Tasmania. Requisite statutory number of votes not obtained in New South Wales.
- 1899 N.S.W.—First contingent of Australian troops to assist the British army in South Africa.
Conference of Premiers in Melbourne to consider amendments in Federal Constitution Bill. Referendum—Bill accepted by New South Wales, Victoria, Queensland, South Australia, and Tasmania.
- 1900 N.S.W.—Old-age Pensions instituted. W.A.—Agitation for separation by gold-fields. Strike of railway engine drivers and firemen.
Contingents of naval troops from N.S.W., Vic. and S.A. to assist in China.
Commonwealth Constitution Act receives Royal Assent, 9th July. Mr. (afterwards Sir) Edmund Barton forms first Federal Ministry.
- 1901 Proclamation of the Commonwealth at Sydney, and swearing-in of Ministry. Opening of first Federal Parliament at Melbourne by the Duke of Cornwall and York, who visited each State of the Commonwealth. Simultaneous Australasian Census—population of the Commonwealth, 3,773,801.
- 1902 N.S.W.—Disastrous explosion at Mount Kembla Colliery—95 lives lost. Women's franchise. Jubilee of Sydney University. S.A.—Reduction of number of members of both Houses of Parliament. W.A.—Opening of pumping station at Northam in connection with Goldfields water supply.

- 1903 Vic.—Railway Strike (Enginemen). W.A.—Opening of Coolgardie and Kalgoorlie water supply.
Inauguration of the Federal High Court. Conference of Statisticians in Melbourne.
- 1904 N.S.W.—Reduction of members of Legislative Assembly from 125 to 90.
- 1905 N.S.W.—Re-introduction of assisted immigration.
- 1906 Wireless telegraphy installed between Queenscliff, Vic., and Devonport, Tas. Consummation of Commonwealth interstate Free-trade by cessation of special Western Australian tariff. Conference of Statisticians of Australian States and New Zealand, under the presidency of the Commonwealth Statistician. Papua taken over by Commonwealth.
- 1907 N.S.W.—Strike of coal-miners in Newcastle district. Vic.—Opening of first Australian Exhibition of Women's Work in Melbourne. Bakers' strike, Melbourne. Opening of telephone, Sydney to Melbourne.
Imperial Conference in London—Australia represented by the Hon. A. Deakin, Prime Minister. Introduction of new tariff in Federal Parliament. Allowance to Federal members of Parliament increased from £400 to £600.
- 1908 N.S.W.—Tramway employees' strike, Sydney. Fire at Newcastle—damage to property £150,000. Vic.—Railway accident at Braybrook Junction (Sunshine)—44 killed, 412 injured; compensation paid, £126,000.
Yass-Canberra chosen as site of Federal Capital. Interstate Premiers' Conference at Melbourne. Visit of American Fleet to Australia.
- 1909 N.S.W.—Miners' strikes at Broken Hill and Newcastle. Arrest of strike leaders at Newcastle. Qld.—Opening of Queensland University. S.A.—Foundering of *Clan Ranald* in St. Vincent's Gulf—40 drowned. W.A.—Cyclone at Broome.
Imperial Defence Conference in London—Commonwealth sends three representatives. Death at Parliament House of Sir Frederick Holder, Speaker of the House of Representatives. Commonwealth orders two destroyers and one first-class cruiser for fleet unit. Visit of Lord Kitchener to report and advise on Commonwealth military defence. Loss of the *Waratah* with 300 passengers and crew.
- 1910 Vic.—Railway accident at Richmond—9 killed, over 400 injured; compensation paid £129,000. S.A.—Strike of transport workers at Adelaide. W.A.—Cyclone at Broome—several pearling vessels wrecked, 3 whites and many coloured fishermen drowned. Strike of tramway employees at Perth.
Wreck of the *Pericles* off Cape Leeuwin.
Rt. Hon. Sir G. H. Reid takes up duty as High Commissioner for the Commonwealth of Australia in London. Referendum on financial relations between the Commonwealth and the States. Proclamation taking over Yass-Canberra (in New South Wales) as site for Federal Capital. Penny postage. Visit of Scottish Agricultural Commission. Dutch squadron visits Australia. Arrival of the *Yarra* and *Parramatta*, first vessels of Australian navy. Australian Notes Act empowers Federal Treasurer to issue notes of various denominations. Admiral Sir R. Henderson visits Australia to advise on naval defence. First issue of Commonwealth notes.
- 1911 First Federal Census - population of the Commonwealth, 4,455,005. Transfer of Northern Territory to Commonwealth by South Australia. Federal referenda relating to Monopolies and Industrial Legislation—proposals rejected. Introduction of compulsory military training. Launch of Commonwealth destroyer *Warrego* at Sydney. Establishment of penny postage to all parts of British Empire.
- 1912 Opening of Commonwealth Bank. First payments of Maternity Bonus. Turning of first sod at Port Augusta of Trans-Australian Railway (Port Augusta and Kalgoorlie). Resignation of leadership of Liberal party by Mr. Alfred Deakin, and appointment of Mr. Joseph Cook in his stead. Appointment of Administrators to Northern Territory and Federal Territory. Opening of Western Australian University. Gift of £1,000,000 to charities by Mrs. Walter Hall, Sydney, N.S.W. Numerous industrial disturbances: Brisbane tramway employees' and general strike; strike of miners at the Wonthaggi State coal mines.
- 1913 Arrival of battle cruiser *Australia*, and cruisers *Melbourne* and *Sydney*. Foundation stone of Commonwealth Building in London laid by the King. Federal Capital named Canberra and foundation stone laid. Appointment of Interstate Commission. Visit of Empire Trade Commission. Visit of Members of Empire Parliamentary Association.
- 1914 Visit of General Sir Ian Hamilton to report on military defence scheme. Double dissolution of Federal Parliament.

OFFICIAL YEAR BOOK

OF THE

COMMONWEALTH OF AUSTRALIA, 1913,

AND EARLIER YEARS.

SECTION I.

STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 1. Introduction.

1. Development of Australian Statistics.—In the first issue of the Commonwealth Official Year Book (No. 1, 1901-1907), an account was given of the origin and development of Australian Statistics; *vide* pp. 1 to 16 therein. Owing to considerations of space, however, this matter was considerably curtailed in succeeding Year Books, and appears in No. 4 on pp. 1 to 4. In Nos. 5 and 6, and in the present issue, a still further curtailment has been made in order to make room for new matter.

Briefly, it may be stated that to the "Blue Books" compiled in Australia for the Home Government, there succeeded, under Responsible Government, the statistics which each of the departments prepared for itself, State statistical departments being organised principally as collecting agencies of official and general information.

Absence of co-ordination in collection and compilation, due to the organisation, independently, of the various States bureaux, caused difficulties in so combining State statistics as to get a satisfactory statistic for Australia as a whole, and various conferences of State Statisticians did not completely rectify the divergencies that arose.

(i.) *Creation of the Commonwealth Bureau of Census and Statistics.* Constitutionally, matters relating to "Census and Statistics" belong to the Commonwealth, and in 1906, under the authority of the Census and Statistics Act of 1905, providing for the taking of the Census and the collecting of general statistics, the Commonwealth Bureau of Census and Statistics was created. A conference of statistical representatives of Australian States and New Zealand, under the presidency of the Commonwealth Statistician, met in November and December, 1906. For a more or less complete presentation of the affairs of the Commonwealth and of its constituent parts, various desiderata were recognised, and a series of resolutions adopted by the conference. Identity of categories, simultaneity and identity in methods of collection, and uniformity in compilation, were the main features desired. A resumé of the resolutions of this conference is given in Year Book No. 1, pp. 12-16.

(ii.) *Organisation of the Commonwealth Bureau of Census and Statistics.*—In the organisation of the Bureau, while all classes of work may at any time be relegated to any officer, certain fields of activity are attended to mainly by the officers mentioned

hereunder, who, subject to the general direction of the Statistician, supervise the work of the different branches :—

JOHN STONHAM, M.A. (Sydney). Chief Compiler and General Administration.
 CHARLES HENRY WICKENS, A.I.A. Supervisor of Census.
 HENRY SPONDLY (Zurich University). Vital Statistics and Cognate Matters.
 EDWARD TANNOCH MCPHEE. Trade and Customs Statistics and Commerce.
 GERALD LIGHTFOOT, M.A. (Cambridge), B. at Law. Industrial and Social Statistics.
 FREDERICK DALGLISH ROSSITER, M.A. (Melbourne). Defence, General Control of Library, etc.
 F. W. BARFORD, M.A. (Oxford), A.I.A. Financial Statistics.

2. Sources of Information.—Statistical information is furnished (i.) by the State Statistical Bureaux, as a result of direct demand, or through the police and special collectors; (ii.) by Commonwealth and State Departments (see lists of publications in § 2 *infra*); (iii.) in respect of returns of Trade, Customs and Excise, by the Trade and Customs Department; (iv.) by scientific and technical experts, specially requisitioned to write on particular subjects; (v.) by State Statisticians, as officers duly constituted under the Commonwealth Census and Statistics Act; (vi.) and by information supplied compulsorily, on the Commonwealth Statistician's demand.

3. Maintenance of Secrecy.—Under no circumstance can information supplied to a statistical office be used against the individual supplying it. All statistical enquiries are strictly impersonal, and the affairs of individuals or individual businesses are never disclosed. No other Government Department can make use of the Statistical departments in order to acquire detailed information otherwise unavailable.

4. Accuracy Essential.—The importance of accurate statistical information is emphasised, and the making of untrue statements is heavily penalised.

§ 2. Statistical Publications of Australia.

1. Introductory.—The official statistical publications of Australia may be divided bibliographically into two main divisions, viz.:—(1) Commonwealth publications dealing both individually and collectively with the several States of the Commonwealth, and (2) State publications dealing with individual States only. Besides these there are a large number of publications issued regularly, which, though not wholly statistical, necessarily contain a considerable amount of statistical information. These are included in the lists given hereunder, which are revised to 30th November, 1913.

2. Commonwealth Publications.—Commonwealth publications may be grouped under two heads, viz.:—(i.) Publications issued by the Commonwealth Statistician, and (ii.) Departmental Reports and Papers.

(i.) *Publications issued by the Commonwealth Statistician.* The following is a list of statistical publications issued from the Commonwealth Bureau of Census and Statistics since its inauguration and up to 31st December, 1913. The annual *Demography*, *Finance*, *Production*, and *Transport and Communication Bulletins* cover statistics from 1901. The *Year Book* contains figures from earlier years.

Census Bulletins.—No. 1.—Population of States and Territories; No. 2.—Persons of Non-European Race; No. 3.—Ages; No. 4.—Population of Counties, Local Government Areas, etc; No. 5.—Population of Electoral Divisions, Provinces, and Districts; No. 6.—Birthplaces; No. 7.—Length of Residence in Australia; No. 8.—Religions; No. 9.—Education; No. 10.—Blindness and Deafmutism; No. 11.—Schooling; No. 12.—Conjugal Condition; No. 13.—Localities; No. 14.—Mortality Investigation; No. 15.—Families; No. 16.—Occupations; No. 17.—Occupied Dwellings.

Finance—Bulletins, annually, 1907 to 1912.

Labour and Industrial Statistics—Explanatory Memorandum on the Proposed Scheme. Report No. 1—Prices, Price-Indexes and Cost of Living in Australia. Report No. 2—Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia, 1891 to 1912.

Labour Bulletins—Quarterly, May, August, and November, 1913.

Inquiry into the Cost of Living in Australia, 1910-11.—Prices, Price-Indexes and Cost of Living in Australia.

Monthly Summary of Australian Statistics—Bulletins, monthly, since January, 1912.

Population and Vital Statistics Bulletins—Determination of the Population of Australia, 1901 to 1906. Commonwealth Demography, annually, 1906 to 1910. Vital Statistics, annually, 1907 to 1910. Commonwealth Demography (comprising matter previously included in two last-named Bulletins) 1911 and 1912. Vital Statistics, quarterly, 1907 to June 1911*. The Nomenclature of Diseases and of Causes of Death, 1907. New Edition, 1910.

Production—Bulletins, annually, 1906 to 1911.

Professional Papers.—No. 1—The Classification of Diseases and Causes of Death, from the standpoint of the Statistician; Nos. 2 and 3—On the Influence of Infantile Mortality on Birthrate (2 papers); No. 4—On the Statistical Opportunities of the Medical Profession; No. 5—Tuberculosis Duration Frequency Curves, and the number of existing cases ultimately fatal; No. 6—The Problems of Statistics; No. 7—The Evolution and Significance of the Census; No. 8—Census Taking†; No. 9—Studies in Statistical Representation—On the nature of the curve $y = Ax^m e^{nx^p}$; No. 10—Studies in Statistical Representation—Statistical Application of the Fourier series; No. 11—Suicide in Australia; No. 12—An Extension of the Principle Underlying Woolhouse's Method of Graduation†; No. 13—The First Commonwealth Census; No. 14—Mathematical Analysis of Climatological Physiology; No. 15—The International Nosological Classification, etc.; No. 16—Secular Progress of Pulmonary Tuberculosis and Cancer, etc.; No. 17—The Improvement in Infantile Mortality, etc.; No. 18—Secular and Annual Fluctuations of Deaths from Several Diseases, etc.

Railway Statistics—Report on the Desirability of Improved Statistics of Government Railways in Australia, February, 1909.

Shipping—Shipping and Oversea Migration, annually, 1906 to 1912.

Social Insurance—Report to the Hon. the Minister of Trade and Customs.

Superannuation for the Commonwealth Public Service—Report to the Hon. the Minister of Home Affairs.

The Australian Commonwealth: Its Resources and Production—Annually, 1908 to 1913.

Trade and Customs—Trade, and Customs and Excise Revenue, annually, 1906 to 1912.

Trade, Shipping, and Oversea Migration—Monthly, January, 1907, to December, 1911 (now discontinued; issued as part of Monthly Summary of Australian Statistics).

Transport and Communication—Bulletins, annually, 1906 to 1912.

Social Statistics—Bulletins, annually, 1907 to 1911.

Official Year Book of the Commonwealth—Annually, 1907 to 1912.

Pocket Compendium of Commonwealth Statistics.

* The publication of quarterly Vital Statistics has been discontinued.

† By C. H. Wickens, A.I.A.

(ii.) *Commonwealth Parliamentary and Departmental Reports and Papers.* The following are the principal official reports and papers containing statistical matter which have been issued since the inauguration of the Commonwealth :—

- Arbitration Court: Returns of Awards, Conferences, Agreements, etc.
- Australia for Farmers, 1910.
- Australia: The Wheat Country.
- Australian Notes: Correspondence relating to the Gold Reserve in respect of the issue of.
- Budget, annual, 1901-02 to 1913-14.
- Chief of the General Staff: Memo. *re* Defence.
- Commonwealth Bank: Balance Sheets and Reports of Auditor-General.
- Commonwealth Factories: Reports on Clothing, Cordite, Small Arms, and Harness and Leather Factories.
- Commonwealth Meteorologist: Bulletins of Climate and Meteorology of Australia; Rainfall Maps of Australia; Professional Papers and Charts (various); Monthly Meteorological Reports, commencing January, 1910.
- Commonwealth Military Journal, issued quarterly, April, 1911 to October, 1913.
- Contract Immigrants Act and Immigration Restriction Act: Returns annually, 1902 to 1912.
- Defence: Inspector-General of Military Forces: Reports, 1905 to 1907. Extracts from Report, annual, 1910 to 1913.
- Defence: Memorandum on Australian Military Defence and its progress since Federation.
- Defence: Memorandum on the Defence of Australia, by Field-Marshal Lord Kitchener.
- Defence: Military Board—Reports, 1905 and 1906.
- Defence: Naval Defence of Australia—Memorandum by Admiral Sir Reginald Henderson.
- Defence: Report on Dockyards, Canteens at Camps, Royal Military College, Universal Training, Cadets, Organisation and Distribution, etc.
- Director of Naval Forces: Report for 1906.
- Electoral Act: Commissioners' Special Reports.
- Electoral Rolls: Statement by Commonwealth Statistician *re* Inflation.
- Electoral Statistical Returns *re* Referenda of 1911 and 1913.
- Electoral Statistics of Commonwealth Elections: 1903, 1906, 1910 and 1913.
- Estimates: 1901-2 to 1913-14. Also Supplementary Estimates.
- Federal Capital City Designs.
- Fisheries: Reports of the Director on Fishing Experiments carried out by the F.I.S. "Endeavour."
- Fisheries: Reports on Pearling Industry.
- Fisheries: Zoological Results of Fishing Experiments. Parts 1 to 3.
- Fleet Unit: Memorandum *re* arrangement for providing and training personnel.
- Fruit Industry: Report of Royal Commission.
- Handbooks of the Territory of Papua.
- High Commissioner of the Commonwealth: Reports, annual, 1910 to 1912. Reports on Australian Butter Market in England. Visit to Canada and United States.
- Home Affairs: Schedule of the Department, compiled from the Minister's Digests. Nos. 1 to 14.
- Invalid and Old-Age Pensions: Statements *re*.
- Land Tax Assessment Act: Annual Reports of Commissioner, 1910-11 and 1911-12.
- Lands and Surveys: Report of Conference of Commonwealth Director and States Surveyors-General.

- Lighthouses : Reports of Inspections, etc.
- Manufactures Encouragement Act : Returns of Bounties Paid ; annual.
- Military and Naval Forces Lists. Also Cadet Forces Lists.
- Naturalisation Act 1903 : Returns.
- Northern Territory : Bulletins Nos. 1 to 8.
- Northern Territory : Report of the Government Resident for 1910 (previous reports to Government of South Australia).
- Northern Territory : Report of the Acting Administrator for 1911. Administrator's Report, 1912.
- Northern Territory : Reports, various.
- Papua : Reports, annual 1904-5 to 1911-12, and returns to accompany same.
- Papua : Reports, various.
- Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.
- Patents Statistics, 1904 to 1913.
- Postal Services Royal Commission.
- Postmaster-General's Department : Annual Reports, 1910 and 1911-2.
- Postmaster-General's Department : Statement of Business transacted and details of Receipts and Expenditure, 1907, 1908 and 1909.
- Press Cable Subsidy : Amount paid, etc.
- Public Service Commissioner : Report, 1901-4 and Annual Reports, 1905 to 1912, and Public Service Lists, 1903 to 1912-13.
- Quarantine : Reports.
- Railways : Reports, various, *re* Gauges of Australian Railways, Unification of Gauges, etc.
- Railways : Reports of Engineer-in-Chief.
- Representation Act 1905 : Returns.
- Royal Commission on Tasmanian Customs Leakage.
- Secret Remedies : Based on British Medical Association's Analyses.
- Social Insurance : Report by the Hon. Sir John Cockburn on the Hague Conference of 1910.
- Sugar : Statistics, 1901-2 to 1910-11 *re* White and Black Labour, Production, Duties, Excise, Bounties, etc.
- Sugar Industry : Report of Royal Commission.
- Tariff Guide : 1903 to 1912. Also Tariff Schedules.
- Trade and Customs Returns, 1903 to 1905 ; compiled by the New South Wales Government Statistician for the Minister for Customs.
- Trade Marks Statistics, 1904 to 1913.
- Treasurer's Statements and Reports of Auditor-General, annual, 1901-2 to 1911-1912.
- Treasury Notes : Amounts issued to the respective Banks of the Commonwealth.
- Treasury Statements of Receipts and Expenditure, issued quarterly in the *Commonwealth Gazette*.
- Tropical Diseases : Report by Dr. Breinl.

3. State Publications.—The chief statistical publications of each State issued since Federation may be most conveniently grouped under the following heads, viz.:—(a) Publications issued by the Government Statist, (b) parliamentary and departmental reports and papers, and (c) reports and statements of local and public bodies. These are set out hereunder for each State:—

(i.) **New South Wales.**—(a) *Publications by Government Statistician:—*

The Wealth and Progress of New South Wales, 1900-1.
 The Seven Colonies of Australasia, 1901-2.
 A Statistical Account of Australia and New Zealand, 1902-3, 1903-4.
 The Official Year Book of New South Wales, 1904-5 to 1912.
 Six States of Australia and New Zealand (annual statistics), 1901 to 1905.
 Monthly Statistical Bulletin, 1905 to September 1913.
 Statistical Registers, 1901 to 1911, and 1912 (parts).
 Census of New South Wales, 1901.
 Vital Statistics (annual), 1901 to 1912; and monthly issues to September, 1913.
 Agricultural and Live-stock Statistics, 1901 to 1912.
 Statistical View of the Progress of New South Wales during 50 years, 1856 to 1906.
 Friendly Societies' Experience, New South Wales, 1900-1908.
 Comparative Legislation relating to the Industrial Classes.
 Population of New South Wales and movements of population between New South Wales and other Countries, quarterly, December, 1911, to June 1913.
 Annual and other Reports on Agricultural, Dairying, and Pastoral Industries, on Manufactories and Works, and on Value of Production.
 Statesman's Year Book, 1913.

(b) *Departmental Papers:—*

Annual Reports of—

Aborigines	Industrial Schools
Australian Museum	Inspector-General of Insane
Board of Public Health	Labour Commissioners
Chief Commissioner of Railways	Leprosy (Board of Health)
Chief Medical Officer	Miners' Accident Relief Fund
Comptroller-General of Prisons	Minister of Public Instruction
Department of Agriculture	National Art Gallery
Department of Crown Lands	National Park Trust
Department of Mines	Pharmacy Board
Department of Police	Public Disaster Relief Fund
Department of Public Works	Public Library
Director of Botanical Gardens and Domain	Public Service Board
Director of Labour	Registrar of Friendly Societies, Building Societies, and Trade Unions
Factories and Shops Act; Minimum Wage Act; Early Closing Acts; Shearers' Accommodation Act, etc.	Registrar-General
Fisheries Board	Savings Bank
Forestry Department	State Brickworks
Government Bureau of Microbiology	State Children's Relief Board
Government Railways, Superannuation Account	State Debt Commissioners
Government Savings Bank	Superintendent of Carpenterian Reformatory
Immigration and Tourist Bureau	Technological Museums
	University of Sydney
	Western Land Board.

Public Service Lists.

The Estimates of Revenue and Expenditure.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Trade Reports, various.

Observatory Reports and Bulletins.

Public Accounts and Report of the Auditor-General.

Treasurer's Financial Statement, and Papers to accompany.

General Election 1910. Double Voting. Synopsis of the Voting.

The New South Wales Industrial Gazette (monthly).
 State Contracts for the Public Service.
 Agricultural Gazette (monthly).
 Records of the Geological Survey.
 Statement of Assets and Liabilities of Public Companies (quarterly).
 Statement of Assets and Liabilities of Banks (quarterly).
 Quarterly Return of Gold Yields.

(c) *Reports and Statements of Local Bodies:—*

Annual Statements of Municipalities	Metropolitan Board of Water Supply and Sewerage
Fire Commissioners (formerly Fire Brigades Board)	Official Handbook of the Port of Sydney
Hospitals	Sydney Harbour Trust Commissioners
Hunter District Water Supply and Sewerage Board	Town-Clerk of the City of Sydney.

(ii.) *Victoria.*—(a) *Publications by the Government Statist:—*

Statistical Registers, 1901 to 1911, and 1912 (parts).
 The Victorian Year Books, 1902 to 1911-12, and 1912-13 (parts).
 Quarterly Statistical Abstracts, 1904 to 30th June 1913.
 Quarterly Returns of Vital Statistics, 1901 to 30th June, 1913.
 Vital Statistics, 1911 and 1912.
 Monthly Returns of Oversea Imports and Exports, 1901 to September, 1913.
 Statistics of Manufactories, Works, etc., 1901 to 1911.
 Australasian Statistics, 1901-2, with Summaries for Previous Years.
 The First Fifty Years of Responsible Government in Victoria, 1856 to 1906.
 Census of Victoria, 1901.
 Annual Reports on Agricultural, Viticultural, Dairying, and Pastoral Industries, and on Value of Production.
 Annual Report on Friendly Societies.
 Annual Report on Trade Unions.

(b) *Departmental Papers:—*

Annual Reports of—

Board for the Protection of Aborigines	Inspector of Neglected Children and Reformatory Schools
Board of Public Health	Inspector-General of Penal Establishments, Gaols, and Reformatory Prisons
Board of Visitors, Observatory	Inspector-General of Savings Banks
Chief Engineer for Railway Construction	Lands Purchase and Management Board
Chief Inspector of Explosives	Licenses Reduction Board
Chief Inspector of Factories, Workrooms and Shops	Marine Board of Victoria
Coal Miners' Accidents Relief Fund	Minister of Public Instruction
Committee of Public Accounts	Parliamentary Standing Committee on Railways
Conservator of Forests	Public Service Commissioner
Council of Judges	Registrar of Friendly Societies
Council of Public Education	Railways Commissioners
Department of Agriculture	Secretary for Mines
Department of Crown Lands and Survey	State Rivers and Water Supply Commission
Government Astronomer	Trustees of the Public Library, Museums, and National Gallery
General Manager of State Coal Mines	Vice-Chancellor of Melbourne University.
Indeterminate Sentences Board	
Inspector of Charitable Institutions	
Inspector-General of the Insane	
Inspector of Inebriates' Institutions	

Public Service List.
 Accounts of the Trustees of Agricultural Colleges and the Council of Agricultural Education.
 The Budget.
 Returns under the Banks and Currency Act 1890, the Companies Act 1890, and the Electric Light and Power Act 1896.
 Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.
 Statement of Expenditure under the Constitution Statute.
 The Estimates of Revenue and Expenditure.
 Treasurer's Statement and Report of the Auditor-General.
 Determinations of Wages Boards.
 The Law relating to Factories and Shops in Victoria.
 Agricultural Journal (monthly).
 Register of Teachers and Register of Schools.
 Quarterly Returns of Yield of Goldfields.
 Memoirs and Bulletins of the Geological Survey.
 Vaccination Progress Report.
 Bank Liabilities and Assets.

(c) *Reports of Local Bodies :—*

Annual Reports of the Melbourne Harbour Trust Commission	Hospitals Report and Statement of Tramways Trust
Annual Reports of the Fire Brigades Board	Statement of Accounts of the Melbourne and Metropolitan Board of Works, and Report.
Annual Statements of Municipal and Shire Councils	
Geelong Municipal Waterworks Trust	

(iii.) **Queensland.**—(a) *Publications by Government Statistician :—*

The Queensland Official Year Book, 1901.
 The Census of 1901.
 A.B.C. of Queensland Statistics, 1905 to 1913.
 Vital Statistics (annual), 1901 to 1912; and monthly issues to September, 1913.
 Statistical Registers, 1901 to 1912.
 Annual Reports on Agricultural, Dairying, and Pastoral Statistics.

(b) *Departmental Papers :—*

Annual Reports of the—

Agent-General	Engineer for Harbours and Rivers
Bureau of Sugar Experiment Stations	Government Analyst
Chief Protector of Aborigines	Government Central Sugar Mills
Chief Inspector of Machinery & Scaffolding	Govt. Life Insurance and Annuity Business
Commissioner of Public Health	Government Resident at Thursday Island
Commissioner of Income Tax	Government Savings Bank
Commissioner of Police	Hydraulic Engineer on Water Supply
Commissioner for Railways	Immigration Agent
Comptroller-General of Prisons	Inspector of Hospitals for the Insane
Curator of Intestate Estates	Inspector of Orphanages
Department of Agriculture and Stock	Institute of Tropical Medicine
Department of Public Lands	Manager of the Government Savings Bank
Department of Public Works	Marine Department
Director of Forests	Medical Inspector of Schools
Director of Labour and Chief Inspector of Factories and Shops	Officer in Charge, Government Relief
	Official Trustee in Insolvency.

Public Service Board
Registrar of Friendly Societies, Building
Societies, and Trade Unions
Secretary for Public Instruction
State Children's Department
Trustees of the Agricultural Bank

Trustees of the National Art Gallery
Trustees of the Public Library
Under-Secretary for Mines
University of Queensland
Workers' Dwellings Board

Blue Book.

Public Service Lists.

The Estimates of Revenue and Expenditure.

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

Public Accounts and Report of the Auditor-General.

Treasurer's Financial Statement and Tables relating thereto.

Determinations of Wages Boards.

Agricultural Journal (monthly).

The Queensland Sugar Industry, 1913.

Reports of the Geological Survey.

Monthly Reports on Mining, Crown Lands, etc.

(c) *Reports and Statements of Local Bodies:—*

Brisbane Board of Waterworks.

Bundaberg Harbour Board.

Engineer for Harbours and Rivers.

Hospitals, Sanatoria, Asylums, etc.

Annual Statements of Municipalities.

Metropolitan Water and Sewerage Board.

(iv.) *South Australia.—(a) Publications by the Under-Secretary and Government Statist:—*

Statistical Registers, 1901 to 1911, and 1912 (parts).

Monthly Returns of Births and Deaths, 1901 to September, 1913.

Official Year Book of South Australia, 1912 and 1913.

The Census of 1901.

Blue Book.

Statistical Summary of South Australia from its foundation, 1836 to 1910.

Annual Reports on Manufactories and Works, Live Stock, Wheat Harvest, Agricultural and Viticultural Statistics.

(b) *Departmental Papers:—*

Annual Reports of the—

Actuary on Friendly Societies 1900-1904, and 1905-1909.	Government Resident of Northern Territory to 1909 (subsequent reports to Commonwealth Government)
Agent-General	Governors of the Public Library, Museum, and Art Gallery
Audit-Commissioner	Hospital for the Insane
Chief Inspector of Factories	Marine Board
Chief Inspector of Fisheries	Minister for Agriculture
Chief Inspector of Oyster Fisheries	Minister for Education
Chief Inspector of Stock	Public Service Superannuation Board
Commissioner of Police	Registrar-General of Births, Deaths, and Marriages
Commissioner of Railways	Registrar of Trade Unions
Commissioners of the National Park	State Children's Council
Department of Public Works	Surveyor-General
Department of Woods and Forests	Trustees of the Savings Bank.
Destitute Board	
Gaols and Prisons	
Government Astronomer	
Government Geologist	

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

The Estimates of Revenue and Expenditure.

Financial Statement of the Treasurer and appendices relating thereto.

Determinations of Wages Boards.

Mining Operations: Half-Yearly Reviews, 1904 to 1913.

Records and Reports of Geological Survey.

Journal of the Department of Agriculture (monthly).

(c) *Reports and Statements of Local Bodies:—*

Hospitals.

Schools of Mines and Industries.

Fire Brigades Boards.

Municipal Tramways Trust.

City of Adelaide Year Book.

Municipalities.

East Torrens County Board of Health.

(v.) *Western Australia.—(a) Publications by Government Statistician:—*

The Census of 1901.

Statistical Registers, 1901 to 1911 and 1912 (parts).

Monthly Statistical Abstracts, 1901 to September, 1913.

Year Books of Western Australia, 1900-03, 1902-4, 1905 (part).

Quarterly and Annual Reports on Population and Vital Statistics.

Monthly Return of Vital Statistics.

Crop and Live Stock Returns.

Blue Book.

Statistical View of 84 years' progress in Western Australia, 1829 to 1912.

Comparative Statistics, 1890 to 1912.

Annual Reports on Agricultural, etc., Statistics.

Report on Interstate Trade Returns for the Two Years 1911 and 1912.

(b) *Departmental Papers:—*

Annual Reports of the—

Aborigines Department

Agent-General

Agricultural Bank

Art Galleries

Chief Inspector of Explosives

Chief Inspector of Fisheries

Commissioner of Police

Commissioner of Railways

Commissioner of Taxation

Comptroller-General of Prisons

Department of Agriculture

Department of Lands and Surveys

Department of Mines

Department of Public Works

Department of Woods and Forests

Education Department

Geological Survey

Government Analyst

Government Astronomer

Government Labour Bureau

Government Savings Bank

Harbour and Light Department

Inspector-General of Insane

Lands Titles Department

Museum and Art Gallery

Public Library

Principal Medical Officer on Medical,

Health, Factories, Early Closing, Vaccination and Quarantine

Public Service Commissioner

Registrar of Friendly Societies

Registrar of Friendly Societies in connection with Industrial Conciliation and

Arbitration, and Trade Unions

Stock Department

Superintendent of Charities and Inspector of Industrial and Reformatory Schools

Surveyor-General

Parliamentary Papers (miscellaneous); Reports of Committees, Commissions, Conferences, etc.

The Estimates of Revenue and Expenditure.

Public Accounts and Report of the Auditor-General.

Agricultural Journal (monthly).

Reports of proceedings before Boards of Conciliation and Court of Arbitration.
 Bulletins of the Department of State Medicine and Public Health.
 Reports and Bulletins of the Geological Survey.
 Government Savings Bank, Comparative Return (Monthly).
 Western Australia, 1912.

(c) *Reports and Statements of Local Bodies :—*

Cemetery Boards	Metropolitan Waterworks Board
Fire Brigades	Municipalities, Road Boards, and Boards of Health
Fremantle Harbour Trust Commissioners	Public Hospitals
Fremantle Municipal Tramways and Electric Lighting Board	Waterworks Boards (country).

(vi.) **Tasmania.** (a) *Publications by Government Statistician :—*

The Census of 1901.
 Statistical Registers, 1901 to 1911-12.
 Reports on Vital Statistics and Migration (annual), 1901 to 1911 ; and monthly issues to October, 1912.
 Reports on Agricultural and Live Stock Statistics, 1901 to 1911-12.
 Statistical Summaries, 1901 to 1910-11.
 Gold Yield for 1908 and previous 10 years.
 Annual Reports on Agricultural Production, etc., Statistics.

(b) *Departmental Papers :—*

Annual Reports of the—

Agent-General	General Manager of Government Railways
Agricultural Bank of Tasmania	Hobart and Launceston Gaols
Charitable Grants Department	Inspector of Machinery
Chief Inspector of Factories	Lands and Survey Department
Chief Inspector of Stock	Museum and Botanical Gardens
Commissioner of Taxes	Police Department
Department of Agriculture	Public Library
Department of Education	Public Service Board
Department of Mines	Recorder of Titles
Department of Neglected Children	Registrar of Friendly Societies and Trade Unions
Department of Public Health	Savings Bank
Engineer-in-Chief of Public Works	University of Tasmania
Explosives Department	
Public Service List.	
The Budget.	
The Estimates of Revenue and Expenditure.	
Parliamentary Papers (miscellaneous) ; Reports of Committees, Commissions, Conferences, etc.	
Public Debts Sinking Fund.	
Report of the Auditor-General.	
Financial Statement of the Treasurer.	
Wages Boards Determinations.	
Geological Survey Bulletins.	
Progress of the Mineral Industry (quarterly).	

(c) *Reports and Statements of Local Bodies :—*

Country Libraries	Industrial Schools
Fire Brigade Board	Life Assurance Societies
Harbour Trusts	Marine Boards
Hobart Drainage Board	Municipalities.
Hospitals	

§ 3. Bibliography of Recent Works on Australia.

1. *General*.—While not exhaustive, it is hoped that the accompanying list of works dealing with Australia and Australian affairs generally, may prove of some service. The list refers to works published since the year 1901.

- CLARK, A. T. *Australian Constitutional Law*. Melbourne, 1905.
 CLARK, VICTOR S. *The Labour Movement in Australasia*. London, 1906.
 COLLIER, JAMES. *Sir George Grey*. Christchurch, 1909.
 COLLINGRIDGE, GEORGE. *First Discovery of Australia and New Guinea*. Sydney, 1906.
 D'AUNET, B. *L'Aurore Australe*. Melbourne, 1905; Paris, 1907.
 FAVENC, E. *Explorers of Australia*. Melbourne, 1908.
 FORDE, J. L. *The Story of the Bar of Victoria*. Melbourne, 1913.
 FOX, FRANK. *Peeps at Many Lands*. Australia. London, 1911.
 FRASER, J. POSTER. *Australia: The Making of a Nation*. London, 1910.
 GILLIES, WM. *Stories in English History for Young Australians*. Melbourne, 1905.
 GREGORY, J. W. *The Dead Heart of Australia*. London, 1906. *Australia and New Zealand* (in Stanford's *Compendium of Geography and Travel*). London, 1907.
 GREGORY, J. W. *Australasia*. Stanford's Geography. London.
 GREY, J. G. *Australasia. Old and New*. London, 1901.
 HENDERSON, G. C. *Sir George Grey*. London, 1907.
 HOWITT, A. W. *The Native Tribes of South East Australia*. London, 1904.
 JOHNS, FRED. *Fred. Johns's Annual* (first publ. 1912). Empire Edition. London, 1914.
 JOHNS, FRED. *Notable Australians*. 1906. 2nd Edition, Adelaide and London, 1908.
 JOSE, A. W. *History of Australasia*. Sydney, 1909 and 1911.
 KEENAN, J. J. *Commonwealth of Australia Inaugural Celebrations*. Sydney, 1907.
 LONG, C. R. *Stories of Australian Exploration*. Melbourne. Editions 1903, 1906, and 1912.
 MAIDEN, J. H. *Sir Joseph Banks, the Father of Australia*. Sydney, 1909.
 METIN, A. *Le Socialisme sans doctrines: la question ouvrière et la question agraire en Australie et Nouvelle Zélande*. Paris, 1901.
 MOORE, W. H. *The Constitution of the Commonwealth of Australia*. London, 1902. Second Edition. Melbourne, 1910.
 MORGAN, B. H. *The Trade and Industry of Australia*. London, 1909.
 MURDOCH, WALTER. *The Australian Citizen*. Melbourne, 1912.
 NELSON, W. *Foster Fraser's Fallacies*. Sydney, 1910.
 PETRIE, Miss C. C. *Tom Petrie's Reminiscences of Early Queensland*. Brisbane, 1904.
 PHILLIPS, MARION. *A Colonial Autocracy*. London, 1909.
 PRATT, E. A. *The State Railway Muddle in Australia*. London, 1912.
 PULSFORD, E. *Commerce and the Empire*. London, 1903.
 QUICK, HON. SIR J., AND GARRAN, R. R. *The Annotated Constitution of the Australian Commonwealth*. Sydney, 1901.
 QUICK, HON. SIR J., AND GROOM, HON. L. E. *The Judicial Power of the Commonwealth*. Melbourne, 1904.
 REEVES, W. P. *State Experiments in Australia and New Zealand*. 2 vols. London, 1902.
 ROGERS, J. D. *Australia* (in Lucas's *Historical Geography of the British Colonies*). Oxford, 1907.
 ROWLAND, P. F. *The New Nation*. London, 1903.
 RUSDEN, G. W. *History of Australia*. 3 vols. Melbourne, 1908.
 SCHACHNER, R. *Australien in Politik, Wirtschaft, Kultur*. Bd. I. Jena, 1909; do. Bd. II. Jena, 1911.
 SCOTT, ERNEST. *Terre Napoléon: A History of French Explorations and Projects in Australia*. London, 1910. *La Pérouse*. Sydney, 1912.
 SCOTT, R. F. *The Voyage of the Discovery*. 2 vols. London, 1905.
 SCOTTISH AGRICULTURAL COMMISSION'S REPORT. *Australia: Its Land, Conditions, and Prospects*. Edinburgh, 1911.
 SEARCY, A. *In Australian Tropics*. London, 1907. By Flood and Field. Melbourne, 1911.
 SPENCE, W. G. *Australia's Awakening*. Sydney, 1909.
 SPENCER, W. B., AND GILLEN, F. J. *The Northern Tribes of Central Australia*. London, 1904. *Across Australia*. 2 vols. London, 1912.
 ST. LEDGER, A. *Australian Socialism*. London, 1909.
 TAYLOR, T. G. *Australia. Physiographic and Economic*. Oxford, 1911.
 TURNER, H. G. *History of the Colony of Victoria*. London, 1904. *First Decade of the Australian Commonwealth*. London, 1911. *Story of the Eureka Stockade*. Melbourne, 1913.
 VOSSION, L. *L'Australie Nouvelle et son avenir*. Paris, 1902.
 WISE, HON. B. R. *Commonwealth of Australia*. London, 1909. *The Making of the Australian Commonwealth*. London, 1913.
 YEAR BOOK OF AUSTRALIA. Annual. Sydney.

2. *Works on Special Subjects.*—In addition to the works set out in the above bibliography dealing generally with the historical, industrial and personal aspects of the Australian people, there are a number of recent works upon special subjects, of which the following are amongst the more important:—

- BAKER, RICHARD T., AND SMITH, H. G. *A Research on the Eucalypts.* Sydney, 1902. *A Research on the Pines of Australia.* Sydney, 1910.
- BAKER, RICHARD T. *Cabinet Timbers of Australia.* Sydney, 1913.
- CLARK, DONALD. *Australian Mining and Metallurgy.* Melbourne, 1904. *Gold Refining* (with plates). London, 1909.
- COLLIER, JAMES. *The Pastoral Age in Australasia.* London, 1911.
- COLLINS, J. T., AND MEADEN, C. H. *Local Government Law and Taxation.* Melbourne, 1905.
- GILLIES, WM. *First Studies in Insect Life in Australasia.* Melbourne, 1904.
- GUILFOYLE, W. R. *Australian Plants.* Melbourne, 1910.
- HALL, ROBERT, AND GILLIES, W. *Nature Studies in Australia.* Melbourne, 1903. Revised Edition. Melbourne, 1910.
- HALL, ROBERT. *Useful Birds of Southern Australia.* Melbourne, 1907.
- HAWKESWORTH, A. *Australasian Sheep and Wool.* 3rd Edition. Sydney, 1911.
- INGLIS, GORDON. *Sport and Pastime in Australia.* London, 1912.
- LEACH, J. A. *An Australian Bird Book.* Melbourne, 1911.
- LE SOUEF, W. H. D. *Wild Life in Australia.* Melbourne, 1907.
- LUCAS, A. H. S., AND LE SOUEF, W. H. D. *Animals of Australia.* Melbourne, 1909. *The Birds of Australia.* Melbourne, 1911.
- MCALPINE, D. *The Rusts of Australia: their Structure, Nature and Classification.* Melbourne, 1910.
- POWER, F. DANVERS. *Coalfields and Collieries of Australia.* Melbourne, 1912.
- STEAD, D. G. *Fishes of Australia.* Sydney, 1906.
- SUTHERLAND, A. *The Australasian Live Stock Manual.* 2nd Edition. Melbourne and Sydney, 1903.
- WHITE, CHARLES. *History of Australian Bushranging.* 2 vols. Sydney, 1906.

SECTION II.

DISCOVERY, COLONISATION, AND FEDERATION OF AUSTRALIA.

§ 1. Early Knowledge of Australia.

A brief, though fairly comprehensive, account of the discovery and early knowledge of Australia was given in Year Book No. 1 (pp. 44 to 51). This account appeared in a condensed form in Year Books Nos. 2, 3, and 4. Bibliographical references to the subject were also given in Year Book No. 1 (p. 49). Exigencies of space prevent the inclusion of any further reference to this subject in the present issue.

§ 2. The Taking Possession of Australia.

Reference was made to the more important facts relating to the taking possession and annexation of Australia in each of the first four issues of this book: See preferably Year Book No. 4 (pp. 15 and 16). In so far as the annexation of the eastern parts is concerned, a full historical account of the period may be found in the "Historical Records of New South Wales," Vol. I., parts 1 and 2. For an account of the annexation of Western Australia, reference may be made to the West Australian Year Book 1905, Part 1.

§ 3. The Creation of the Several Colonies.

1. **Introduction.**—A historical summary of the facts relating to the creation of the several colonies, the separation of Victoria and Queensland, and the changes in the boundaries of certain of the colonies has appeared in previous issues of this book: see Year Book No. 4 (pp. 16 to 23). The main facts in this connection may be traced by reference to the maps on pages 17 and 18.

2. **No further Creation of Colonies after 1859.**—Since the separation of Queensland in 1859 no other creation of colonies has taken place in Australia, though the boundaries of New South Wales, Queensland, and South Australia were altered later, and the control of the Northern Territory was transferred from South Australia to the Commonwealth in 1911. The dates of foundation of the Australasian colonies, and their areas at the close of 1859, were as shewn in the following table:—

DATES OF FOUNDATION OF AUSTRALASIAN COLONIES AND AREAS AS AT END OF 1859.

Colony.	Date of Annexation.	Date of Creation.	Date of First Permanent Settlement.	Area. * Square Miles.
New South Wales ...	1770	1786	1788	1,020,412
Tasmania ...	1788	1825	1803	26,215
South Australia ...	1788	1834	1836	309,850
Victoria ...	1770	1851	1834	87,884
Queensland ...	1770	1859	1824	554,300
Western Australia ...	1829	1829	1829	975,920
New Zealand ...	1840	1841	1814	104,471 ¹

1. By proclamation dated 10th June, 1901, the area of the Dominion was increased by 280 square miles, making it now 104,751 square miles, by the inclusion of the Cook Group and other islands.

3. **Australasia, 1863 to 1900.**—The immense area generally known as Australasia had, by 1863, been divided into seven distinct colonies, the areas of which are shewn below. The areas of the Northern Territory and the Federal Capital Territory, which are now under the exclusive jurisdiction of the Commonwealth, are given separately.

On the 1st January, 1901, the colonies mentioned above, with the exception of New Zealand, were federated under the name of the "Commonwealth of Australia," the designation of "Colonies" being at the same time changed into that of "States." The total area of the Commonwealth is, therefore, 2,974,581 square miles; the dates of creation and the areas of the separate colonies and territories, as determined on the final adjustment of their boundaries, are shewn in the following table:—

DATES OF CREATION AND AREAS OF THE SEVERAL COLONIES AND TERRITORIES.

Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.	Colony.	Year of Formation into Separate Colony.	Present Area in Square Miles.
New South Wales ...	1786	309,460 ¹	New Zealand ...	1841	104,751
Tasmania ...	1825	26,215	Victoria ...	1851	87,884
Western Australia ...	1829	975,920	Queensland ...	1859	670,500
South Australia (proper)	1834	380,070	Northern Territory	1863	523,620
			Fed. Capital Ter't'y	1911	912 ²
Commonwealth ...	...	...	2,974,581 square miles.		
Australasia ...	...	...	3,079,332 square miles.		

1. Exclusive of Federal Capital Territory.

2. Prior to 1911 included with New South Wales.

4. **British New Guinea or Papua.**—Under the administration of the Commonwealth, but not included in it, is British New Guinea or *Papua*, finally annexed by the British Government in 1884. This territory was for a number of years administered by the Queensland Government, but was transferred to the Commonwealth by proclamation on the 1st September, 1906, under the authority of the Papua Act (Commonwealth) of 16th November, 1905. The area of Papua is about 90,540 square miles. More extended reference to this dependency of the Commonwealth will be found in Section xxix.

5. **Transfer of the Northern Territory to the Commonwealth.**—On the 7th December, 1907, the Commonwealth and the State of South Australia entered into an agreement for the surrender to and acceptance by the Commonwealth of the Northern Territory, subject to approval by the Parliaments of the Commonwealth and the State. This approval was given by the South Australian Parliament under the Northern Territory

Surrender Act 1907 (assented to on the 14th May, 1908), and by the Commonwealth Parliament under the Northern Territory Acceptance Act 1910 (assented to on the 16th November, 1910). The Territory accordingly was transferred by Proclamation to the Commonwealth on the 1st January, 1911. Further information may be found in the section of this book on "*The Northern Territory*."

4. Transfer of the Federal Capital Territory to the Commonwealth.

On the 18th October, 1909, the Commonwealth and the State of New South Wales entered into an agreement for the surrender to and acceptance by the Commonwealth of an area of 912 square miles as the seat of Government of the Commonwealth. In December, 1909, Acts were passed by the Commonwealth and New South Wales Parliaments, approving the agreement, and on the 5th December, 1910, a proclamation was issued vesting the Territory in the Commonwealth on and from the 1st January, 1911.

§ 5. The Exploration of Australia.

A fairly complete, though brief, account of the Exploration of Australia was given in Year Book No. 2 (pp. 20 to 39). A brief summary of the more important facts relating to the subject was given in Year Books Nos. 3 and 4. Maps shewing the progress of Australian exploration may be found on page 35 hereof.

§ 6. The Constitutions of the States.

A brief and condensed statement of the constitutional history of the several States, shewing how their present Constitutions have been built up, may be found in Section II. of the second, third, and fourth issues of the Year Book. See No. 4, pp. 27-32.

§ 7. The Federal Movement in Australia.

A summary was given in Year Book No. 1 (pp. 17 to 21) of the "Federal Movement in Australia" from its inception to its consummation; a synopsis thereof was given in Year Books Nos. 2, 3, and 4. See No. 4, pp. 32 to 37.

§ 8. Creation of the Commonwealth.

1. **The Act.**—The Commonwealth of Australia Constitution Act, 63 and 64 Vic., Chapter 12, namely, an Act to constitute the Commonwealth of Australia, was shewn *in extenso* in Year Book No. 1. In the Year Books Nos. 2, 3 and 4, a summary of the Act was given. As two amending Acts, namely, the Constitution Alteration (Senate Elections) Act 1906, and the Constitution Alteration (State Debts) Act 1909, have been passed, it was thought desirable to insert the Act, as amended, in full in Year Book No. 5 and again in the present issue.

THE COMMONWEALTH OF AUSTRALIA CONSTITUTION ACT. 63 & 64 VICT., CHAPTER 12.

An Act to constitute the Commonwealth of Australia. [9th July, 1900.]

WHIEREAS the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, humbly relying on the blessing of Almighty God, have agreed to unite in one indissoluble Federal Commonwealth under the Crown of the United Kingdom of Great Britain and Ireland, and under the Constitution hereby established:

And whereas it is expedient to provide for the admission into the Commonwealth of other Australasian Colonies and possessions of the Queen:

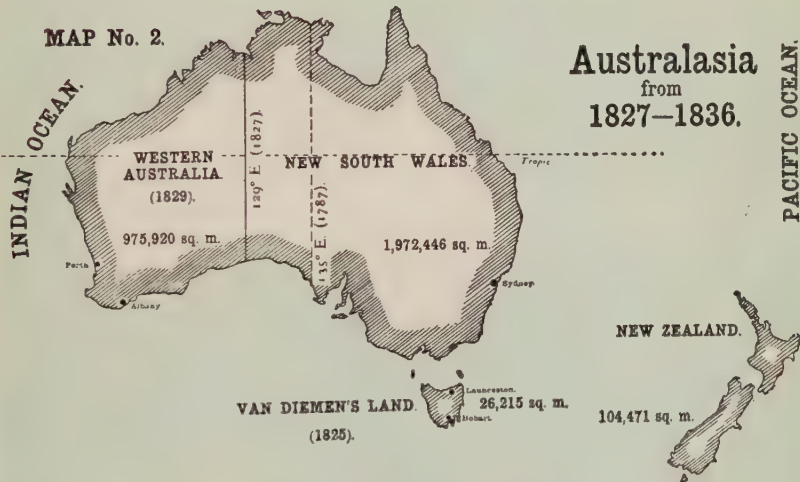
MAP No. 1.

Australasia from 1786-1827.



MAP No. 2.

Australasia from 1827-1836.

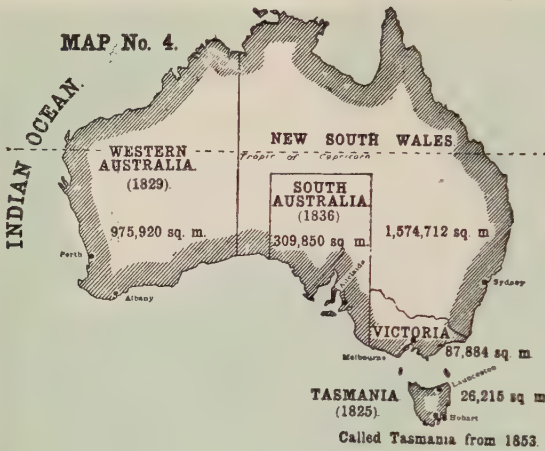


MAP No. 3.

Australasia from 1836-1851.



MAP No. 4.



NEW ZEALAND
(proclaimed 1840).
Separate Colony 1841

104,471 sq. m.

MAP No. 5.



NEW ZEALAND.

104,471 sq. m.

MAP No. 6.



NEW ZEALAND.

104,471 sq. m.

Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

1. This act may be cited as the Commonwealth of Australia Constitution Act.
2. The provisions of this Act referring to the Queen shall extend to Her Majesty's heirs and successors in the sovereignty of the United Kingdom.
3. It shall be lawful for the Queen, with the advice of the Privy Council, to declare by proclamation that, on and after a day therein appointed, not being later than one year after the passing of this Act, the people of New South Wales, Victoria, South Australia, Queensland, and Tasmania, and also, if Her Majesty is satisfied that the people of Western Australia have agreed thereto, of Western Australia, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia. But the Queen may, at any time after the proclamation, appoint a Governor-General for the Commonwealth.
4. The Commonwealth shall be established, and the Constitution of the Commonwealth shall take effect, on and after the day so appointed. But the Parliaments of the several colonies may at any time after the passing of this Act make any such laws, to come into operation on the day so appointed, as they might have made if the Constitution had taken effect at the passing of this act.
5. This Act, and all laws made by the Parliament of the Commonwealth under the Constitution, shall be binding on the courts, judges, and people of every State and of every part of the Commonwealth, notwithstanding anything in the laws of any State; and the laws of the Commonwealth shall be in force on all British Ships, the Queen's ships of war excepted, whose first port of clearance and whose port of destination are in the Commonwealth.
6. "The Commonwealth" shall mean the Commonwealth of Australia as established under this Act.
- "The States" shall mean such of the colonies of New South Wales, New Zealand, Queensland, Tasmania, Victoria, Western Australia and South Australia, including the northern territory of South Australia, as for the time being are parts of the Commonwealth, and such colonies or territories as may be admitted into or established by the Commonwealth as States: and each of such parts of the Commonwealth shall be called "a State."
- "Original States" shall mean such States as are part of the Commonwealth at its establishment.
7. The Federal Council of Australasia Act 1885 is hereby repealed, but so as not to affect any laws passed by the Federal Council of Australasia and in force at the establishment of the Commonwealth.
- Any such law may be repealed as to any State by the Parliament of the Commonwealth, or as to any colony not being a State by the Parliament thereof.
8. After the passing of this Act the Colonial Boundaries Act 1895 shall not apply to any colony which becomes a State of the Commonwealth: but the Commonwealth shall be taken to be a self-governing colony for the purposes of that Act.
9. The Constitution of the Commonwealth shall be as follows :—

THE CONSTITUTION.

This Constitution is divided as follows :—

Chapter I.—The Parliament :—

Part I.—General.

Part II.—The Senate.

Part III.—The House of Representatives.

Part IV.—Both Houses of Parliament.

Part V.—Powers of the Parliament.

Chapter II.—The Executive Government.

Chapter III.—The Judicature.

Chapter IV.—Finance and Trade.

Chapter V.—The States.

Chapter VI.—New States.

Chapter VII.—Miscellaneous.

Chapter VIII.—Alteration of the Constitution.

The Schedule.

CHAPTER I.—THE PARLIAMENT.

PART I.—GENERAL.

1. The legislative power of the Commonwealth shall be vested in a Federal Parliament, which shall consist of the Queen, a Senate, and a House of Representatives, and which is hereinafter called "The Parliament," or "The Parliament of the Commonwealth."

2. A Governor-General appointed by the Queen shall be Her Majesty's representative in the Commonwealth, and shall have and may exercise in the Commonwealth during the Queen's pleasure, but subject to this Constitution, such powers and functions of the Queen as Her Majesty may be pleased to assign to him.

3. There shall be payable to the Queen out of the Consolidated Revenue fund of the Commonwealth, for the salary of the Governor-General, an annual sum which, until the Parliament otherwise provides, shall be ten thousand pounds.

The salary of a Governor-General shall not be altered during his continuance in office.

4. The provisions of this Constitution relating to the Governor-General extend and apply to the Governor-General for the time being, or such persons as the Queen may appoint to administer the Government of the Commonwealth; but no such person shall be entitled to receive any salary from the Commonwealth in respect of any other office during his administration of the Government of the Commonwealth.

5. The Governor-General may appoint such times for holding the sessions of the Parliament as he thinks fit, and may also from time to time, by Proclamation or otherwise, prorogue the Parliament, and may in like manner dissolve the House of Representatives.

After any General election the Parliament shall be summoned to meet not later than thirty days after the day appointed for the return of the writs.

The Parliament shall be summoned to meet not later than six months after the establishment of the Commonwealth.

6. There shall be a session of the Parliament once at least in every year, so that twelve months shall not intervene between the last sitting of the Parliament in one session and its first sitting in the next session.

PART II.—THE SENATE.

7. The Senate shall be composed of senators for each State, directly chosen by the people of the State, voting, until the Parliament otherwise provides, as one electorate.

But until the Parliament of the Commonwealth otherwise provides, the Parliament of the State of Queensland, if that State be an original State, may make laws dividing the State into divisions and determining the number of senators to be chosen for each division, and in the absence of such provision the State shall be one electorate.

Until the Parliament otherwise provides there shall be six senators for each Original State. The Parliament may make laws increasing or diminishing the number of senators for each State, but so that equal representation of the several Original States shall be maintained and that no Original State shall have less than six senators.

The senators shall be chosen for a term of six years, and the names of the senators chosen for each State shall be certified by the Governor to the Governor-General.

8. The qualification of electors of senators shall be in each State that which is prescribed by the Constitution, or by the Parliament, as the qualification for electors of members of the House of Representatives; but in the choosing of senators each elector shall vote only once.

9. The Parliament of the Commonwealth may make laws prescribing the method of choosing senators, but so that the method shall be uniform for all the States. Subject

to any such law, the Parliament of each State may make laws prescribing the method of choosing the senators for that State.

The Parliament of a State may make laws for determining the times and places of elections of senators for that State.

10. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State, for the time being, relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections of senators for the State.

11. The Senate may proceed to the despatch of business, notwithstanding the failure of any State to provide for its representation in the Senate.

12. The Governor of any State may cause writs to be issued for elections of senators for the State. In case of the dissolution of the Senate the writs shall be issued within ten days from the proclamation of such dissolution.

13. As soon as may be after the Senate first meets, and after each first meeting of the Senate following a dissolution thereof, the Senate shall divide the senators chosen for each State into two classes, as nearly equal in number as practicable; and the places of the senators of the first class shall become vacant at the expiration of [the third year] *three years*¹, and the places of those of the second class at the expiration of [the sixth year] *six years*¹ from the beginning of their term of service; and afterwards the places of senators shall become vacant at the expiration of six years from the beginning of their term of service.

The election to fill vacant places shall be made [in the year at the expiration of which] *within one year before*¹ the places are to become vacant.

For the purpose of this section the term of service of a senator shall be taken to begin on the first day of [January] *July*¹ following the day of his election, except in the cases of the first election and of the election next after any dissolution of the Senate, when it shall be taken to begin on the first day of [January] *July*¹ preceding the day of his election.²

14. Whenever the number of senators for a State is increased or diminished, the Parliament of the Commonwealth may make such provision for the vacating of the places of senators for the State as it deems necessary to maintain regularity in the rotation.

15. If the place of a senator becomes vacant before the expiration of his term of service, the Houses of Parliament of the State for which he was chosen shall, sitting and voting together, choose a person to hold the place until the expiration of the term, or until the election of a successor as hereinafter provided, whichever first happens. But if the Houses of Parliament of the State are not in session at the time when the vacancy is notified, the Governor of the State, with the advice of the Executive Council thereof, may appoint a person to hold the place until the expiration of fourteen days after the beginning of the next session of the Parliament of the State, or until the election of a successor, whichever first happens.

At the next general election of members of the House of Representatives, or at the next election of senators for the State, whichever first happens, a successor shall, if the term has not then expired, be chosen to hold the place from the date of his election until the expiration of the term.

The name of any senator so chosen or appointed shall be certified by the Governor of the State to the Governor-General.

1. As amended by section 2 of the Constitution Alteration (Senate Elections) 1906. The words in square brackets have been repealed; amendments are shown in italics.

2. Under sections 3 and 4, the Constitution Alteration (Senate Elections) 1906, it was also provided that—

(a) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and nine are extended until the thirtieth day of June One thousand nine hundred and ten.

(b) The terms of service of the senators whose places would, but for this Act, become vacant at the expiration of the year One thousand nine hundred and twelve are extended until the thirtieth day of June One thousand nine hundred and thirteen.

(c) This Act shall not be taken to alter the time of beginning of the term of service of any senator elected in the year One thousand nine hundred and six.

16. The qualifications of a senator shall be the same as those of a member of the House of Representatives.

17. The Senate shall, before proceeding to the despatch of any other business, choose a senator to be the President of the senate; and as often as the office of President becomes vacant the Senate shall again choose a senator to be the President.

The President shall cease to hold his office if he ceases to be a senator. He may be removed from office by a vote of the Senate, or he may resign his office or his seat by writing addressed to the Governor-General.

18. Before or during any absence of the President, the Senate may choose a senator to perform his duties in his absence.

19. A Senator may, by writing addressed to the President, or to the Governor-General if there is no President or if the President is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

20. The place of a senator shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the Senate, fails to attend the Senate.

21. Whenever a vacancy happens in the Senate, the President, or if there is no President or if the President is absent from the Commonwealth the Governor-General, shall notify the same to the Governor of the State in the representation of which the vacancy has happened.

22. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the senators shall be necessary to constitute a meeting of the Senate for the exercise of its powers.

23. Questions arising in the Senate shall be determined by a majority of votes, and each senator shall have one vote. The President shall in all cases be entitled to a vote; and when the votes are equal the question shall pass in the negative.

PART III.—THE HOUSE OF REPRESENTATIVES.

24. The House of Representatives shall be composed of members directly chosen by the people of the Commonwealth, and the number of such members shall be, as nearly as practicable, twice the number of the senators.

The number of members chosen in the several States shall be in proportion to the respective numbers of their people, and shall, until the Parliament otherwise provides, be determined, whenever necessary, in the following manner:—

- (i.) A quota shall be ascertained by dividing the number of the people of the Commonwealth, as shewn by the latest statistics of the Commonwealth, by twice the number of the senators:
- (ii.) The number of members to be chosen in each State shall be determined by dividing the number of the people of the State, as shewn by the latest statistics of the Commonwealth, by the quota; and if on such division there is a remainder greater than one-half of the quota, one more member shall be chosen in the State.

But notwithstanding anything in this section, five members at least shall be chosen in each Original State.

25. For the purposes of the last section, if by the law of any State all persons of any race are disqualified from voting at elections for the more numerous House of the Parliament of the State, then, in reckoning the number of the people of the State or of the Commonwealth, persons of that race resident in that State shall not be counted.

26. Notwithstanding anything in section twenty-four, the number of members to be chosen in each State at the first election shall be as follows:—

New South Wales	...	23	|	South Australia...	...	6
Victoria	...	20	|	Tasmania	...	5
Queensland	...	8	|			

Provided that if Western Australia is an Original State, the Number shall be as follows:—

New South Wales	..	26	South Australia	..	7
Victoria	..	23	Western Australia	..	5
Queensland	..	9	Tasmania	..	5

27. Subject to this Constitution the Parliament may make laws for increasing or diminishing the number of the members of the House of Representatives.

28. Every House of Representatives shall continue for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General.

29. Until the Parliament of the Commonwealth otherwise provides, the Parliament of any State may make laws for determining the divisions in each State for which members of the House of Representatives may be chosen, and the number of members to be chosen for each division. A division shall not be formed out of parts of different States.

In the absence of other provisions, each State shall be one electorate.

30. Until the Parliament otherwise provides, the qualification of electors of members of the House of Representatives shall be in each State that which is prescribed by the law of the State as the qualification of electors of the more numerous House of Parliament of the State; but in the choosing of members each elector shall vote only once.¹

31. Until the Parliament otherwise provides, but subject to this Constitution, the laws in force in each State for the time being relating to elections for the more numerous House of the Parliament of the State shall, as nearly as practicable, apply to elections in the State of members of the House of Representatives.

32. The Governor-General in Council may cause writs to be issued for general elections of members of the House of Representatives.

After the first general election, the writs shall be issued within ten days from the expiry of a House of Representatives or from the proclamation of a dissolution thereof.

33. Whenever a vacancy happens in the House of Representatives, the Speaker shall issue his writ for the election of a new member, or if there is no speaker, or if he is absent from the Commonwealth, the Governor-General in Council may issue the writ.

34. Until the Parliament otherwise provides, the qualifications of a member of the House of Representatives shall be as follows:—

(i.) He must be of the full age of twenty-one years, and must be an elector entitled to vote at the election of members of the House of Representatives, or a person qualified to become such elector, and must have been for three years at the least a resident within the limits of the Commonwealth as existing at the time when he is chosen :

(ii.) He must be a subject of the Queen, either natural-born or for at least five years naturalised under a law of the United Kingdom, or of a colony which has become or becomes a State, or of the Commonwealth, or of a State.

35. The House of Representatives shall, before proceeding to the despatch of any other business, choose a member to be the Speaker of the House, and as often as the office of Speaker becomes vacant the House shall again choose a member to be the Speaker.

The Speaker shall cease to hold his office if he ceases to be a member. He may be removed from office by a vote of the House, or he may resign his office or his seat by writing addressed to the Governor-General.

36. Before or during any absence of the Speaker, the House of Representatives may choose a member to perform his duties in his absence.

37. A member may by writing addressed to the Speaker, or to the Governor-General if there is no Speaker or if the Speaker is absent from the Commonwealth, resign his place, which thereupon shall become vacant.

1. The franchise qualification was determined by the Commonwealth Franchise Act 1902.

38. The place of a member shall become vacant if for two consecutive months of any session of the Parliament he, without the permission of the House, fails to attend the House.

39. Until the Parliament otherwise provides, the presence of at least one-third of the whole number of the members of the House of Representatives shall be necessary to constitute a meeting of the House for the exercise of its powers.

40. Questions arising in the House of Representatives shall be determined by a majority of votes other than that of the Speaker. The Speaker shall not vote unless the numbers are equal, and then he shall have a casting vote.

PART IV.—BOTH HOUSES OF THE PARLIAMENT.

41. No adult person who has or acquires a right to vote at elections for the more numerous House of the Parliament of a State shall, while the right continues, be prevented by any law of the Commonwealth from voting at elections for either House of the Parliament of the Commonwealth.

42. Every Senator and every member of the House of Representatives shall before taking his seat make and subscribe before the Governor-General, or some person authorised by him, an oath or affirmation of allegiance in the form set forth in the schedule to this Constitution.

43. A member of either House of the Parliament shall be incapable of being chosen or of sitting as a member of the other House.

44. Any person who—

- (i.) Is under any acknowledgment of allegiance, obedience, or adherence to a foreign power, or is a subject or a citizen or entitled to the rights or privileges of a subject or a citizen of a foreign power : or
- (ii.) Is attainted of treason, or has been convicted and is under sentence, or subject to be sentenced, for any offence punishable under the law of the Commonwealth or of the State by imprisonment for one year or longer : or
- (iii.) Is an undischarged bankrupt or insolvent : or
- (iv.) Holds any office of profit under the Crown, or any pension payable during the pleasure of the Crown out of any of the revenues of the Commonwealth : or
- (v.) Has any direct or indirect pecuniary interest in any agreement with the Public Service of the Commonwealth otherwise than as a member and in common with the other members of an incorporated company consisting of more than twenty-five persons :

shall be incapable of being chosen or of sitting as a senator or a member of the House of Representatives.

But sub-section iv. does not apply to the office of any of the Queen's Ministers of State for the Commonwealth, or of any of the Queen's Ministers for a State, or to the receipt of pay, half-pay, or a pension by any person as an officer or member of the Queen's navy or army, or to the receipt of pay as an officer or member of the naval or military forces of the Commonwealth by any person whose services are not wholly employed by the Commonwealth.

45. If a senator or member of the House of Representatives—

- (i.) Becomes subject to any of the disabilities mentioned in the last preceding section : or
- (ii.) Takes the benefit, whether by assignment, composition, or otherwise, of any law relating to the bankrupt or insolvent debtors : or
- (iii.) Directly or indirectly takes or agrees to take any fee or honorarium for services rendered to the Commonwealth, or for services rendered in the Parliament to any person or State :

his place shall thereupon become vacant.

46. Until the Parliament otherwise provides, any person declared by this Constitution to be incapable of sitting as a senator or as a member of the House of Representatives shall, for every day on which he so sits, be liable to pay the sum of one hundred pounds to any person who sues for it in any court of competent jurisdiction.

47. Until the Parliament otherwise provides, any question respecting the qualification of a senator or of a member of the House of Representatives, or respecting a vacancy in either House of the Parliament, and any question of a disputed election to either House, shall be determined by the House in which the question arises.

48. Until the Parliament otherwise provides, each senator and each member of the House of Representatives shall receive an allowance of four hundred pounds a year to be reckoned from the day on which he takes his seat¹.

49. The powers, privileges, and immunities of the Senate and of the House of Representatives, and of the members and the committees of each House, shall be such as are declared by the Parliament, and until declared shall be those of the Commons House of Parliament of the United Kingdom, and of its members and committees, at the establishment of the Commonwealth.

50. Each House of the Parliament may make rules and orders with respect to—

- (i.) The mode in which its powers, privileges, and immunities may be exercised and upheld;
- (ii.) The order and conduct of its business and proceedings either separately or jointly with the other House.

PART V.—POWERS OF THE PARLIAMENT.²

51. The Parliament shall, subject to this Constitution, have power to make laws for the peace, order, and good government of the Commonwealth with respect to—

- (i.) Trade and commerce with other countries, and among the States;²
- (ii.) Taxation; but so as not to discriminate between States or parts of States;
- (iii.) Bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth:

1. By the Parliamentary Allowances Act 1907, assented to on the 28th August, the amount of the allowance was increased to £800 a year.

2. Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (a) The Constitution Alteration (Legislative Powers) 1910, and (b) the Constitution Alteration (Monopolies) 1910.

(a) *Constitution Alteration (Legislative Powers) 1910*. The object of this proposed law was to extend the powers of the Commonwealth Government (under section 51 of the Constitution) in four directions, viz.—(a) Trade and Commerce, (b) Corporations, (c) Industrial matters, and (d) Trusts and monopolies.

(a) *Trade and Commerce*. In Section 51, para. (i.) of the Constitution, it was proposed to omit the words "with other countries, and among the States," so as to give the Commonwealth Parliament power to legislate with respect to trade and commerce, without limitation.

(b) *Corporations*. It was proposed to omit the words (para. xx.) "Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth," and to insert in lieu thereof the words—"Corporations including (a) the creation, dissolution, regulation, and control of corporations; (b) corporations formed under the law of a State (except any corporation formed solely for religious, charitable, scientific or artistic purposes, and not for the acquisition of gain by the corporation or its members), including their dissolution, regulation, and control; and (c) foreign corporations, including their regulation and control."

(c) *Industrial Matters*. In para. xxxv. it was proposed to omit the words "Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State," and to insert in lieu thereof the words "Labour and employment, including (a) the wages and conditions of labour and employment in any trade, industry, or calling, and (b) the prevention and settlement of industrial disputes, including disputes in relation to employment on or about railways, the property of any State."

(d) *Trusts and Monopolies*. It was proposed to amend Section 51 of the Constitution by adding at the end thereof the following paragraph:—" (x1.) Combinations and monopolies in relation to the production, manufacture, or supply of goods or services."

(b) *Constitution Alteration (Monopolies) 1910*. The object of this proposed law was to alter the Constitution by inserting, after Section 51 thereof, the following section: "51A. When each House of Parliament, in the same session, has by resolution declared that the industry or business of producing, manufacturing, or supplying goods, or of supplying any specified services, is the subject of any monopoly, the Parliament shall have power to make laws for carrying on the industry or business by or under the control of the Commonwealth, and acquiring for that purpose on just terms any property used in connection with the industry or business."

Neither of the proposed laws was approved by the people.

On the 31st May, 1913, the date of the Parliamentary elections, the same proposed alterations were again submitted to the people, with an additional one whereby the conditions of employment and the settlement of disputes relating thereto in the several State railway services might be brought within the jurisdiction of the Commonwealth. All six proposed laws were negated by the people.—See section XXV. § 2.

- (iv.) Borrowing money on the public credit of the Commonwealth :
- (v.) Postal, telegraphic, telephonic, and other like services :
- (vi.) The naval and military defence of the Commonwealth and of the several States, and the control of the forces to execute and maintain the laws of the Commonwealth :
- (vii.) Lighthouses, lightships, beacons and buoys :
- (viii.) Astronomical and meteorological observations :
- (ix.) Quarantine :
- (x.) Fisheries in Australian waters beyond territorial limits :
- (xi.) Census and statistics :
- (xii.) Currency, coinage, and legal tender :
- (xiii.) Banking, other than State banking ; also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money :
- (xiv.) Insurance, other than State insurance ; also State insurance extending beyond the limits of the State concerned :
- (xv.) Weights and measures :
- (xvi.) Bills of exchange and promissory notes :
- (xvii.) Bankruptcy and insolvency :
- (xviii.) Copyrights, patents of inventions and designs, and trade marks :
- (xix.) Naturalisation and aliens :
- (xx.) Foreign corporations, and trading or financial corporations formed within the limits of the Commonwealth :¹
- (xxi.) Marriage :
- (xxii.) Divorce and matrimonial causes ; and in relation thereto, parental rights, and the custody and guardianship of infants :
- (xxiii.) Invalid and old-age pensions :
- (xxiv.) The service and execution throughout the Commonwealth of the civil and criminal process and the judgments of the Courts of the States :
- (xxv.) The recognition throughout the Commonwealth of the laws, the public Acts and records, and the judicial proceedings of the States :
- (xxvi.) The people of any race, other than the aboriginal race in any State, for whom it is deemed necessary to make special laws :
- (xxvii.) Immigration and emigration :
- xxviii.) The influx of criminals :
- xxix.) External affairs :
- (xxx.) The relations of the Commonwealth with the islands of the Pacific :
- (xxxi.) The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws :
- (xxxii.) The control of railways with respect to transport for the naval and military purposes of the Commonwealth :
- (xxxiii.) The acquisition, with the consent of a State, of any railways of the State on terms arranged between the Commonwealth and the State :
- (xxxiv.) Railway construction and extension in any State with the consent of that State :
- (xxxv.) Conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State :¹
- (xxxvi.) Matters in respect of which this Constitution makes provision until the Parliament otherwise provides :
- (xxxvii.) Matters referred to the Parliament of the Commonwealth by the Parliament or Parliaments of any State or States, but so that the law shall extend only to States by whose Parliaments the matter is referred, or which afterwards adopt the law :

1. See footnote 2 on previous page.

xxxviii.) The exercise within the Commonwealth, at the request or with the concurrence of the Parliaments of all the States directly concerned, of any power which can at the establishment of this Constitution be exercised only by the Parliament of the United Kingdom or by the Federal Council of Australasia :

(xxxix.) Matters incidental to the execution of any power vested by this Constitution in the Parliament or in either House thereof, or in the Government of the Commonwealth, or in the Federal Judicature, or in any department or officer of the Commonwealth.

52. The Parliament shall, subject to this Constitution, have exclusive power to make laws for the peace, order and good government of the Commonwealth with respect to—

(i.) The seat of Government of the Commonwealth, and all places acquired by the Commonwealth for public purposes :

(ii.) Matters relating to any department of the public service the control of which is by this Constitution transferred to the Executive Government of the Commonwealth :

(iii.) Other matters declared by this Constitution to be within the exclusive power of the Parliament.

53. Proposed laws appropriating revenue or moneys, or imposing taxation, shall not originate in the Senate. But a proposed law shall not be taken to appropriate revenue or moneys, or to impose taxation, by reason only of its containing provisions for the imposition or appropriation of fines or other pecuniary penalties, or for the demand or payment or appropriation of fees for licenses, or fees for services under the proposed law.

The Senate may not amend proposed laws imposing taxation, or proposed laws appropriating revenue or moneys for the ordinary annual services of the Government.

The Senate may not amend any proposed law so as to increase any proposed charge or burden on the people.

The Senate may at any stage return to the House of Representatives any proposed law which the Senate may not amend, requesting, by message, the omission or amendment of any items or provisions therein. And the House of Representatives may, if it thinks fit, make any of such omissions or amendments, with or without modifications.

Except as provided in this section, the Senate shall have equal power with the House of Representatives in respect of all proposed laws.

54. The proposed law which appropriates revenue or moneys for the ordinary annual services of the Government shall deal only with such appropriations.

55. Laws imposing taxation shall deal only with the imposition of taxation, and any provisions therein dealing with any other matter shall be of no effect.

Laws imposing taxation, except laws imposing duties of customs or of excise, shall deal with one subject of taxation only ; but laws imposing duties of customs shall deal with duties of customs only, and laws imposing duties of excise shall deal with duties of excise only.

56. A vote, resolution, or proposed law for the appropriation of revenue or moneys shall not be passed unless the purpose of the appropriation has in the same session been recommended by message of the Governor-General to the House in which the proposal originated.

57. If the House of Representatives passes any proposed law, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, and if after an interval of three months the House of Representatives, in the same or the next session, again passes the proposed law with or without any amendments which have been made, suggested, or agreed to by the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may dissolve the Senate and the House of Representatives simultaneously. But such dissolution shall not take place within six months before the date of the expiry of the House of Representatives by effluxion of time.

If after such dissolution the House of Representatives again passes the proposed law, with or without any amendments which have been made, suggested, or agreed to by

the Senate, and the Senate rejects or fails to pass it, or passes it with amendments to which the House of Representatives will not agree, the Governor-General may convene a joint sitting of the members of the Senate and of the House of Representatives.

The members present at the joint sitting may deliberate and shall vote together upon the proposed law as last proposed by the House of Representatives, and upon amendments, if any, which have been made therein by one House and not agreed to by the other, and any such amendments which are affirmed by an absolute majority of the total number of the members of the Senate and House of Representatives shall be taken to have been carried, and if the proposed law, with the amendments, if any, so carried is affirmed by an absolute majority of the total number of members of the Senate and House of Representatives, it shall be taken to have been duly passed by both Houses of the Parliament, and shall be presented to the Governor-General for the Queen's assent.

58. When a proposed law passed by both Houses of the Parliament is presented to the Governor-General for the Queen's assent, he shall declare, according to his discretion, but subject to this Constitution, that he assents in the Queen's name, or that he withholds assent, or that he reserves the law for the Queen's pleasure.

The Governor-General may return to the House in which it originated any proposed law so presented to him, and may transmit therewith any amendments which he may recommend, and the Houses may deal with the recommendation.

59. The Queen may disallow any law within one year from the Governor-General's assent, and such disallowance on being made known by the Governor-General by speech or message to each of the Houses of the Parliament, or by Proclamation, shall annul the law from the day when the disallowance is so made known.

60. A proposed law reserved for the Queen's pleasure shall not have any force unless and until within two years from the day on which it was presented to the Governor-General for the Queen's assent the Governor-General makes known, by speech or message to each of the Houses of Parliament, or by Proclamation, that it has received the Queen's assent.

CHAPTER II.—THE EXECUTIVE GOVERNMENT.

61. The executive power of the Commonwealth is vested in the Queen and is exercisable by the Governor-General as the Queen's representative, and extends to the execution and maintenance of this Constitution, and of the laws of the Commonwealth.

62. There shall be a Federal Executive Council to advise the Governor-General in the government of the Commonwealth, and the members of the Council shall be chosen and summoned by the Governor-General and sworn as Executive Councillors, and shall hold office during his pleasure.

63. The provisions of this Constitution referring to the Governor-General in Council shall be construed as referring to the Governor-General acting with the advice of the Federal Executive Council.

64. The Governor-General may appoint officers to administer such departments of State of the Commonwealth as the Governor-General in Council may establish.

Such officers shall hold office during the pleasure of the Governor-General. They shall be members of the Federal Executive Council, and shall be the Queen's Ministers of State for the Commonwealth.

After the first general election no Minister of State shall hold office for a longer period than three months unless he is or becomes a senator or a member of the House of Representatives.

65. Until the Parliament otherwise provides, the Ministers of State shall not exceed seven in number, and shall hold such offices as the Parliament prescribes, or, in the absence of provision, as the Governor-General directs.

66. There shall be payable to the Queen, out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of the Ministers of State, an annual sum which, until the Parliament otherwise provides, shall not exceed twelve thousand pounds a year.

67. Until the Parliament otherwise provides, the appointment and removal of all other officers of the Executive Government of the Commonwealth shall be vested in the Governor-General in Council, unless the appointment is delegated by the Governor-General in Council or by a law of the Commonwealth to some other authority.

68. The command in chief of the naval and military forces of the Commonwealth is vested in the Governor-General as the Queen's representative.

69. On a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments of the public service in each State shall be transferred to the Commonwealth:—¹

Posts, telegraphs, and telephones :	Lighthouses, lightships, beacons, and buoys :
Naval and military defence :	Quarantine.

But the departments of Customs and of excise in each State shall become transferred to the Commonwealth on its establishment.

70. In respect of matters which, under this Constitution, pass to the Executive Government of the Commonwealth, all powers and functions which at the establishment of the Commonwealth are vested in the Governor of a Colony, or in the Governor of a Colony with the advice of his Executive Council, or in any authority of a Colony, shall vest in the Governor-General, or in the Governor-General in Council, or in the authority exercising similar powers under the Commonwealth, as the case requires.

CHAPTER III.—THE JUDICATURE.

71. The Judicial power of the Commonwealth shall be vested in a Federal Supreme Court, to be called the High Court of Australia, and in such other federal courts as the Parliament creates, and in such other courts as it invests with federal jurisdiction. The High Court shall consist of a Chief Justice, and so many other Justices, not less than two, as the Parliament prescribes.

72. The Justices of the High Court and of the other courts created by the Parliament—

- (i.) Shall be appointed by the Governor-General in Council :
- (ii.) Shall not be removed except by the Governor-General in Council, on an address from both Houses of the Parliament in the same session, praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) Shall receive such remuneration as the Parliament may fix : but the remuneration shall not be diminished during their continuance in office.

73. The High Court shall have jurisdiction, with such exceptions and subject to such regulations as the Parliament prescribes, to hear and determine appeals from all judgments, decrees, orders, and sentences—

- (i.) Of any justice or justices exercising the original jurisdiction of the High Court :
- (ii.) Of any other federal court, or court exercising federal jurisdiction ; or of the Supreme Court of any State, or of any other court of any State from which at the establishment of the Commonwealth an appeal lies to the Queen in Council :

(iii.) Of the Inter-State Commission, but as to questions of law only :
and the judgment of the High Court in all such cases shall be final and conclusive.

But no exception or regulation prescribed by the Parliament shall prevent the High Court from hearing and determining any appeal from the Supreme Court of a State in any matter in which at the establishment of the Commonwealth an appeal lies from such Supreme Court to the Queen in Council.

Until the Parliament otherwise provides, the conditions of and restrictions on appeals to the Queen in Council from the Supreme Courts of the several States are applicable to appeals from them to the High Court.

1. As to departments and dates of transfer see Section XIX.—COMMONWEALTH FINANCE, §1, hereinafter.

74. No appeal shall be permitted to the Queen in Council from a decision of the High Court upon any question, howsoever arising, as to the limits *inter se* of the Constitutional powers of the Commonwealth and those of any State or States, or as to the limits *inter se* of the Constitutional powers of any two or more States, unless the High Court shall certify that the question is one which ought to be determined by Her Majesty in Council.

The High Court may so certify if satisfied that for any special reason the certificate should be granted, and thereupon an appeal shall lie to Her Majesty in Council on the question without further leave.

Except as provided in this section, this Constitution shall not impair any right which the Queen may be pleased to exercise by virtue of Her Royal prerogative to grant special leave of appeal from the High Court to Her Majesty in Council. The Parliament may make laws limiting the matters in which such leave may be asked, but proposed laws containing any such limitation shall be reserved by the Governor-General for Her Majesty's pleasure.

75. In all matters—

- (i.) Arising under any treaty ;
- (ii.) Affecting consuls or other representatives of other countries ;
- (iii.) In which the Commonwealth, or a person suing or being sued on behalf of the Commonwealth, is a party ;
- (iv.) Between States, or between residents of different States, or between a State and a resident of another State ;
- (v.) In which a writ of Mandamus or prohibition or an injunction is sought against an officer of the Commonwealth ;

the High Court shall have original jurisdiction.

76. The Parliament may make laws conferring original jurisdiction on the High Court in any matter—

- (i.) Arising under this Constitution, or involving its interpretation ;
- (ii.) Arising under any laws made by the Parliament ;
- (iii.) Of Admiralty and maritime jurisdiction ;
- (iv.) Relating to the same subject-matter claimed under the laws of different States.

77. With respect to any of the matters mentioned in the last two sections the Parliament may make laws—

- (i.) Defining the jurisdiction of any federal court other than the High Court ;
- (ii.) Defining the extent to which the jurisdiction of any federal court shall be exclusive of that which belongs to or is invested in the courts of the States ;
- (iii.) Investing any court of a State with federal jurisdiction.

78. The Parliament may make laws conferring rights to proceed against the Commonwealth or a State in respect of matters within the limits of the judicial power.

79. The federal jurisdiction of any court may be exercised by such number of judges as the Parliament prescribes.

80. The trial on indictment of any offence against any law of the Commonwealth shall be by jury, and every such trial shall be held in the State where the offence was committed, and if the offence was not committed within any State the trial shall be held at such place or places as the Parliament prescribes.

CHAPTER IV.—FINANCE AND TRADE.

81. All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution.

82. The costs, charges and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund shall form the first charge thereon : and the revenue of the Commonwealth shall in the first instance be applied to the payment of the expenditure of the Commonwealth.

83. No money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law.

But until the expiration of one month after the first meeting of the Parliament the Governor-General in Council may draw from the Treasury and expend such moneys as may be necessary for the maintenance of any department transferred to the Commonwealth and for the holding of the first elections for the Parliament.

84. When any department of the public service of a State becomes transferred to the Commonwealth, all officers of the department shall become subject to the control of the Executive Government of the Commonwealth.

Any such officer who is not retained in the service of the Commonwealth shall, unless he is appointed to some other office of equal emolument in the public service of the State, be entitled to receive from the State any pension, gratuity, or other compensation, payable under the law of the State on the abolition of his office.

Any such officer who is retained in the service of the Commonwealth shall preserve all his existing and accruing rights, and shall be entitled to retire from office at the time, and on the pension or retiring allowance, which would be permitted by the law of the State if his service with the Commonwealth were a continuation of his service with the State. Such pension or retiring allowance shall be paid to him by the Commonwealth ; but the State shall pay to the Commonwealth a part thereof, to be calculated on the proportion which his term of service with the State bears to his whole term of service, and for the purpose of the calculation his salary shall be taken to be that paid to him by the State at the time of transfer.

Any officer who is, at the establishment of the Commonwealth, in the public service of a State, and who is, by consent of the Governor of the State with the advice of the Executive Council thereof, transferred to the public service of the Commonwealth, shall have the same rights as if he had been an officer of a department transferred to the Commonwealth and were retained in the service of the Commonwealth.

85. When any department of the public service of a State is transferred to the Commonwealth—

- (i.) All property of the State of any kind, used exclusively in connexion with the department, shall become vested in the Commonwealth ; but, in the case of the departments controlling customs and excise and bounties, for such time only as the Governor-General in Council may declare to be necessary ;
- (ii.) The Commonwealth may acquire any property of the State, of any kind used, but not exclusively used in connexion with the department ; the value thereof shall, if no agreement can be made, be ascertained in, as nearly as may be, the manner in which the value of land, or of an interest in land, taken by the State for public purposes is ascertained under the law of the State in force at the establishment of the Commonwealth ;
- (iii.) The Commonwealth shall compensate the State for the value of any property passing to the Commonwealth under this section ; if no agreement can be made as to the mode of compensation, it shall be determined under laws to be made by the Parliament ;
- (iv.) The Commonwealth shall, at the date of the transfer, assume the current obligations of the State in respect of the department transferred.

86. On the establishment of the Commonwealth, the collection and control of duties of customs and of excise, and the control of the payment of bounties, shall pass to the Executive Government of the Commonwealth.

87. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied to the payment of interest on debts of the several States taken over by the Commonwealth.¹

88. Uniform duties of customs shall be imposed within two years after the establishment of the Commonwealth.²

89. Until the imposition of uniform duties of customs—

(i.) The Commonwealth shall credit to each State the revenues collected therein by the Commonwealth.

(ii.) The Commonwealth shall debit to each State—

(a) The expenditure therein of the Commonwealth incurred solely for the maintenance or continuance as at the time of transfer, of any department transferred from the State to the Commonwealth;

(b) The proportion of the State, according to the number of its people, in other expenditure of the Commonwealth.

(iii.) The Commonwealth shall pay to each State month by month the balance (if any) in favour of the State.

90. On the imposition of uniform duties of customs the power of the Parliament to impose duties of customs and of excise, and to grant bounties on the production or export of goods, shall become exclusive.

On the imposition of uniform duties of customs all laws of the several States imposing duties of customs or of excise, or offering bounties on the production or export of goods, shall cease to have effect, but any grant of or agreement for any such bounty lawfully made by or under the authority of the Government of any State shall be taken to be good if made before the thirtieth day of June, one thousand eight hundred and ninety-eight, and not otherwise.

91. Nothing in this Constitution prohibits a State from granting any aid to or bounty on mining for gold, silver, or other metals, nor from granting, with the consent of both Houses of the Parliament of the Commonwealth expressed by resolution, any aid to or bounty on the production or export of goods.

92. On the imposition of uniform duties of customs, trade, commerce, and intercourse among the States, whether by means of internal carriage or ocean navigation, shall be absolutely free.

But notwithstanding anything in this Constitution, goods imported before the imposition of uniform duties of customs into any State, or into any Colony which, whilst the goods remain therein, becomes a State, shall, on thence passing into another State, within two years after the imposition of such duties, be liable to any duty chargeable on the importation of such goods into the Commonwealth, less any duty paid in respect of the goods on their importation.

93. During the first five years after the imposition of uniform duties of customs and thereafter until the Parliament otherwise provides—

(i.) The duties of customs chargeable on goods imported into a State and afterwards passing into another State for consumption, and the duties of excise paid on goods produced or manufactured in a State and afterwards passing into another State for consumption, shall be taken to have been collected not in the former but in the latter State:

1. This has been known as the Braddon clause. The Surplus Revenue Act 1910 provides for the termination of this clause as from the 31st December, 1910, and for the payment to the States of twenty-five shillings per head of population until the 30th June, 1920, or thereafter, until Parliament otherwise provides, subject to certain adjustments for the year ended 30th June, 1911. For further information see Section XIX hereinafter.

2. Uniform customs duties were imposed by the Customs Tariff 1902, as from 8th October, 1901.

- (ii.) Subject to the last sub-section, the Commonwealth shall credit revenue, debit expenditure, and pay balances to the several States as prescribed for the period preceding the imposition of uniform duties of customs.¹

94. After five years from the imposition of uniform duties of customs, the Parliament may provide, on such basis as it deems fair, for the monthly payment to the several States of all surplus revenue of the Commonwealth.

95. Notwithstanding anything in this Constitution, the Parliament of the State of Western Australia, if that State be an original State, may, during the first five years after the imposition of uniform duties of customs, impose duties of customs on goods passing into that State and not originally imported from beyond the limits of the Commonwealth; and such duties shall be collected by the Commonwealth.

But any duty so imposed on any goods shall not exceed during the first of such years the duty chargeable on the goods under the law of Western Australia in force at the imposition of uniform duties, and shall not exceed during the second, third, fourth, and fifth of such years respectively, four-fifths, three-fifths, two-fifths, and one-fifth of such latter duty, and all duties imposed under this section shall cease at the expiration of the fifth year after the imposition of uniform duties.

If at any time during the five years the duty on any goods under this section is higher than the duty imposed by the Commonwealth on the importation of the like goods, then such higher duty shall be collected on the goods when imported into Western Australia from beyond the limits of the Commonwealth.

96. During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit.

97. Until the Parliament otherwise provides, the laws in force in any Colony which has become or becomes a State with respect to the receipt of revenue and the expenditure of money on account of the Government of the Colony, and the review and audit of such receipt and expenditure, shall apply to the receipt of revenue and the expenditure of money on account of the Commonwealth in the State in the same manner as if the Commonwealth, or the Government or an officer of the Commonwealth, were mentioned, whenever the Colony, or the Government or an officer of the Colony, is mentioned.

98. The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

99. The Commonwealth shall not, by any law or regulation of trade, commerce, or revenue, give preference to one State or any part thereof over another State or any part thereof.

100. The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

101. There shall be an Inter-State Commission, with such powers of adjudication and administration as the Parliament deems necessary for the execution and maintenance, within the Commonwealth, of the provisions of this Constitution relating to trade and commerce, and of all laws made thereunder.²

102. The Parliament may by any law with respect to trade or commerce forbid, as to railways, any preference or discrimination by any State, or by any authority constituted under a State, if such preference or discrimination is undue and unreasonable, or unjust to any State due regard being had to the financial responsibilities incurred by any State in connexion with the construction and maintenance of its railways. But no preference or discrimination shall, within the meaning of this section, be taken to be undue and unreasonable, or unjust to any State, unless so adjudged by the Inter-State Commission.

1. The Surplus Revenue Act 1908, which was amended by the Surplus Revenue Act 1910, states that the provisions of Section 93 of the Constitution shall expire on the date of the commencement of the Surplus Revenue Act 1908, that is, on 13th June, 1908, and also makes provisions in lieu of the expired provisions. The Surplus Revenue Act 1910 repeals the greater part of the provisions of the Act of 1908. See footnote to Section 87 of this Act.

2. The Commission was brought into existence in 1913, under Act No. 33 of 1912.

103. The members of the Inter-State Commission—

- (i.) Shall be appointed by the Governor-General in Council :
- (ii.) Shall hold office for seven years, but may be removed within that time by the Governor-General in Council, on an address from both Houses of Parliament in the same session praying for such removal on the ground of proved misbehaviour or incapacity :
- (iii.) Shall receive such remuneration as the Parliament may fix ; but such remuneration shall not be diminished during their continuance in office.

104. Nothing in this Constitution shall render unlawful any rate for carriage of goods upon a railway, the property of a State, if the rate is deemed by the Inter-State Commission to be necessary for the development of the territory of the State, and if the rate applies equally to goods within the State and to goods passing into the State from other States.

105. The Parliament may take over from the States their public debts [as existing at the establishment of the Commonwealth],¹ or a proportion thereof according to the respective numbers of their people as shewn by the latest statistics of the Commonwealth, and may convert, renew, or consolidate such debts, or any part thereof : and the States shall indemnify the Commonwealth in respect of the debts taken over, and thereafter the interest payable in respect of the debts shall be deducted and retained from the portions of the surplus revenue of the Commonwealth payable to the several States, or if such surplus is insufficient, or if there is no surplus, then the deficiency or the whole amount shall be paid by the several States.

CHAPTER V.—THE STATES.

106. The Constitution of each State of the Commonwealth shall, subject to this Constitution, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be, until altered in accordance with the Constitution of the State.

107. Every power of the Parliament of a Colony which has become or becomes a State, shall, unless it is by this Constitution exclusively vested in the Parliament of the Commonwealth or withdrawn from the Parliament of the State, continue as at the establishment of the Commonwealth, or as at the admission or establishment of the State, as the case may be.

108. Every law in force in a Colony which has become or becomes a State, and relating to any matter within the powers of the Parliament of the Commonwealth, shall, subject to this Constitution, continue in force in the State : and, until provision is made in that behalf by the Parliament of the Commonwealth, the Parliament of the State shall have such powers of alteration and of repeal in respect of any such law as the Parliament of the Colony had until the Colony became a State.

109. When a law of a State is inconsistent with a law of the Commonwealth, the latter shall prevail, and the former shall, to the extent of the inconsistency, be invalid.

110. The provisions of this Constitution relating to the Governor of a State extend and apply to the Governor for the time being of the State, or other chief executive officer or administrator of the Government of the State.

111. The Parliament of a State may surrender any part of the State to the Commonwealth ; and upon such surrender, and the acceptance thereof by the Commonwealth, such part of the State shall become subject to the exclusive jurisdiction of the Commonwealth.

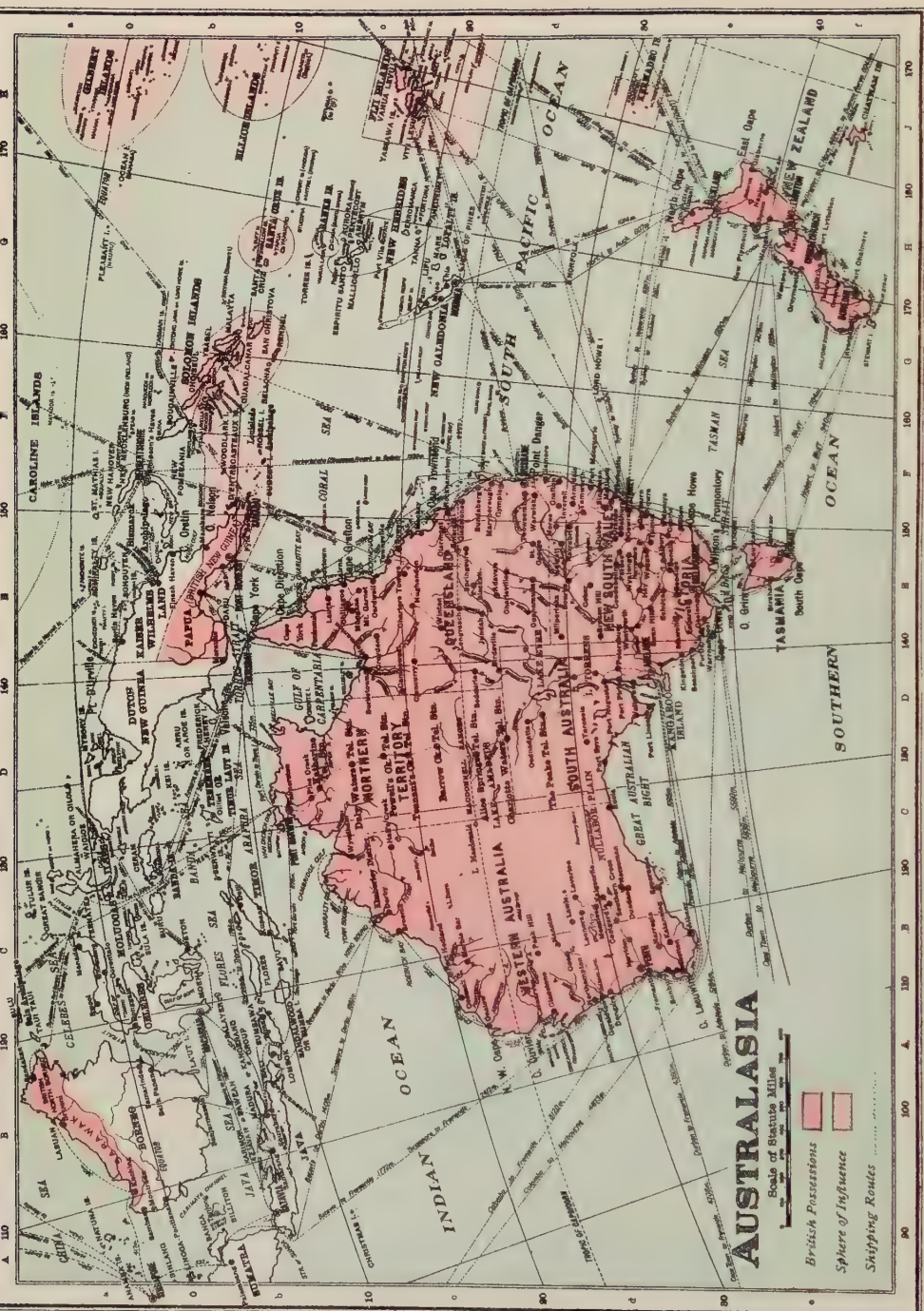
112. After uniform duties of customs have been imposed, a State may levy on imports or exports, or on goods passing into or out of the State, such charges as may be necessary for executing the inspection of laws of the State : but the net produce of all charges so levied shall be for the use of the Commonwealth ; and any such inspection laws may be annulled by the Parliament of the Commonwealth.

1. Under Section 2 of the Constitution Alteration (State Debts) 1909, the words in square brackets are omitted.



PROGRESS OF AUSTRALIAN EXPLORATION.

The above maps compiled by Mr. E. Favenc shew decennially the progress of discovery from 1808 to 1888. The dark shade shews the area of unexplored territory.



113. All fermented, distilled, or other intoxicating liquids passing into any State or remaining therein for use, consumption, sale, or storage, shall be subject to the laws of the State as if such liquids had been produced in the State.

114. A State shall not, without the consent of the Parliament of the Commonwealth, raise or maintain any naval or military force, or impose any tax on property of any kind belonging to the Commonwealth, nor shall the Commonwealth impose any tax on property of any kind belonging to a State.

115. A State shall not coin money, nor make anything but gold and silver coin a legal tender in payment of debts.

116. The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth.

117. A subject of the Queen, resident in any State, shall not be subject in any other State to any disability or discrimination which would not be equally applicable to him if he were a subject of the Queen resident in such other State.

118. Full faith and credit shall be given, throughout the Commonwealth, to the laws, the public Acts and records, and the judicial proceedings of every State.

119. The Commonwealth shall protect every State against invasion, and, on the application of the Executive Government of the State, against domestic violence.

120. Every State shall make provision for the detention in its prisons of persons accused or convicted of offences against the laws of the Commonwealth, and for the punishment of persons convicted of such offences, and the Parliament of the Commonwealth may make laws to give effect to this provision.

CHAPTER VI.—NEW STATES.

121. The Parliament may admit to the Commonwealth or establish new States, and may upon such admission or establishment make or impose such terms and conditions, including the extent of representation in either House of the Parliament, as it thinks fit.

122. The Parliament may make laws for the government of any territory surrendered by any State to and accepted by the Commonwealth, or of any territory placed by the Queen under the authority of and accepted by the Commonwealth, or otherwise acquired by the Commonwealth, and may allow the representation of such territory in either House of the Parliament to the extent and on the terms which it thinks fit.

123. The Parliament of the Commonwealth may, with the consent of the Parliament of a State, and the approval of the majority of the electors of the State voting upon the question, increase, diminish, or otherwise alter the limits of the State, upon such terms and conditions as may be agreed on, and may, with the like consent, make provision respecting the effect and operation of any increase or diminution or alteration of territory in relation to any State affected.

124. A new State may be formed by separation of territory from a State, but only with consent of the Parliament thereof, and a new State may be formed by the union of two or more States or parts of States, but only with the consent of the Parliaments of the States affected.

CHAPTER VII.—MISCELLANEOUS.

125. The seat of Government of the Commonwealth shall be determined by the Parliament, and shall be within territory which shall have been granted to or acquired by the Commonwealth, and shall be vested in and belong to the Commonwealth, and shall be in the State of New South Wales, and be distant not less than one hundred miles from Sydney.

Such territory shall contain an area of not less than one hundred square miles, and such portion thereof as shall consist of Crown lands shall be granted to the Commonwealth without any payment therefor.

The Parliament shall sit at Melbourne until it meet at the seat of Government.

126. The Queen may authorise the Governor-General to appoint any person, or any persons jointly or severally, to be his deputy or deputies within any part of the Commonwealth, and in that capacity to exercise during the pleasure of the Governor-General such powers and functions of the Governor-General as he thinks fit to assign to such deputy or deputies, subject to any limitations expressed or directions given by the Queen : but the appointment of such deputy or deputies shall not affect the exercise by the Governor-General himself of any power or function.

127. In reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted.

CHAPTER VIII.—ALTERATION OF THE CONSTITUTION.¹

128. This constitution shall not be altered except in the following manner :—

The proposed law for the alteration thereof must be passed by an absolute majority of each House of the Parliament, and not less than two nor more than six months after its passage through both Houses the proposed law shall be submitted in each State to the electors qualified to vote for the election of members of the House of Representatives.²

But if either House passes any such proposed law by an absolute majority, and the other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, and if after an interval of three months the first-mentioned House in the same or the next session again passes the proposed law by an absolute majority with or without any amendment which has been made or agreed to by the other House, and such other House rejects or fails to pass it or passes it with any amendment to which the first-mentioned House will not agree, the Governor-General may submit the proposed law as last proposed by the first-mentioned House, and either with or without any amendments subsequently agreed to by both Houses, to the electors in each State qualified to vote for the election of the House of Representatives.

When a proposed law is submitted to the electors the vote shall be taken in such manner as the Parliament prescribes. But until the qualification of electors of members of the House of Representatives becomes uniform throughout the Commonwealth, only one-half the electors voting for and against the proposed law shall be counted in any State in which adult suffrage prevails.

And if in a majority of the States a majority of the electors voting approve the proposed law, and if a majority of all the electors voting also approve the proposed law it shall be presented to the Governor-General for the Queen's assent.

No alteration diminishing the proportionate representation of any State in either House of the Parliament, or the minimum number of representatives of a State in the House of Representatives, or increasing, diminishing, or otherwise altering the limits of the State, or in any manner affecting the provisions of the Constitution in relation thereto, shall become law unless the majority of the electors voting in that State approve the proposed law.

SCHEDULE.

OATH.

I, A.B., do swear that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law. SO HELP ME GOD!

1. The Constitution has been altered by the following Acts :—The Constitution Alteration (Senate Elections) 1906 (No. 1 of 1907) ; and the Constitution Alteration (State Debts) 1909 (No. 3 of 1910).

2. The Referendum (Constitution Alteration) Act, 1906-1910, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

AFFIRMATION.

I, A.B., do solemnly and sincerely affirm and declare that I will be faithful and bear true allegiance to Her Majesty Queen Victoria, Her heirs and successors according to law.

(NOTE. — *The name of the King or Queen of the United Kingdom of Great Britain and Ireland for the time being is to be substituted from time to time.*)

2. **The Royal Proclamation.**—The preceding Act received the Royal assent on the 9th July, 1900. This made it lawful (see Sec. 3) to declare that the people of Australia should be united in a Federal Commonwealth. This proclamation, made on the 17th September, 1900, constituted the Commonwealth as from the 1st January, 1901: it reads as follows:—

BY THE QUEEN.

A PROCLAMATION.

(Signed) VICTORIA R.

WHEREAS by an Act of Parliament passed in the Sixty-third and Sixty-fourth Years of Our Reign, intituled “An Act to constitute the Commonwealth of Australia,” it is enacted that it shall be lawful for the Queen, with the advice of the Privy Council, to declare by Proclamation, that, on and after a day therein appointed, not being later than One Year after the passing of this Act, the people of *New South Wales, Victoria, South Australia, Queensland, and Tasmania*, and also, if Her Majesty is satisfied that the people of *Western Australia* have agreed thereto, of *Western Australia*, shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

And whereas We are satisfied that the people of *Western Australia* have agreed thereto accordingly.

We therefore, by and with the advice of Our Privy Council, have thought fit to issue this Our Royal Proclamation, and We do hereby declare that on and after the First day of *January* One thousand nine hundred and one, the people of *New South Wales, Victoria, South Australia, Queensland, Tasmania, and Western Australia* shall be united in a Federal Commonwealth under the name of the Commonwealth of Australia.

Given at Our Court at *Balmoral* this Seventeenth day of *September*, in the Year of Our Lord One thousand nine hundred, and in the Sixty-fourth Year of Our Reign.

GOD SAVE THE QUEEN.

§ 9. Commonwealth Legislation.

1. **The Commonwealth Parliaments.**—The first Parliament of the Commonwealth was convened by proclamation dated 29th April, 1901, by His Excellency the late Marquis of Linlithgow, then Earl of Hopetoun, Governor-General. It was opened on the 9th May by H.R.H. the Duke of Cornwall and York, who had been sent to Australia for that purpose by His Majesty the King; the Rt. Hon. Sir Edmund Barton, P.C., G.C.M.G., K.C., being Prime Minister. It was dissolved on the 23rd November, 1903. The second Parliament was convened on the 2nd March, 1904, by His Excellency the Rt. Hon. Baron Northcote, P.C., G.C.M.G., G.C.I.E., C.B.; the Hon. Alfred Deakin being Prime Minister. The third session closed on the 12th October, 1906, and Parliament

was dissolved on the 8th November, 1906. The first session of the third Parliament commenced on the 20th February, 1907, and the fourth and last session on the 26th May, 1909. This Parliament expired by effluxion of time on the 19th February, 1910. The first session of the fourth Parliament dated from the 1st July, 1910, and was on the 29th November following prorogued until the 7th February, 1911, the prorogation finally extending to the 5th September, when the second session commenced. This session was prorogued on the 21st December, 1911, the third and final session commencing on the 19th June, 1912. This Parliament expired by effluxion of time on the 23rd April, 1913, and the first session of the fifth Parliament was entered upon on 9th July following, and was prorogued on the 19th December. The Debates of these Parliaments will be found in Volumes I. to LXXII. of the Parliamentary Debates, as follows:—

First Parliament,	1st Session	Vols.	I. to	XII., pp. 1 to 16,744
" "	2nd "	"	XIII. "	XVII., " 1 " 6,440
Second Parliament,	1st "	"	XVIII. "	XXIV., " 1 " 8,618
" "	2nd "	"	XXV. "	XXX., " 1 " 7,461
" "	3rd "	"	XXXI. "	XXXV., " 1 " 6,491
Third Parliament,	1st "	"	XXXVI.	" 1 " 141
" "	2nd "	"	XXXVI. "	XLVI., " 1 " 12,203
" "	3rd "	"	XLVII. "	XLVIII., " 1 " 3,180
" "	4th "	"	XLIX. "	LIV., " 1 " 7,296
Fourth Parliament,	1st "	"	LV. "	LIX., " 1 " 6,893
" "	2nd "	"	LX. "	LXIII., " 1 " 4,983
" "	3rd "	"	LXIV. "	LXIX., " 1 " 7,568
Fifth Parliament,	1st "	"	LXX. "	LXXII., " 1 " 4,798

2. The Several Administrations.—The following tabular statements shew the names of the several Governors-General, and the constitution of the Ministries which have directed the administration of the affairs of the Commonwealth since its creation:

(a) GOVERNORS-GENERAL.

Rt. Hon. EARL OF HOPETOUN (afterwards MARQUIS OF LINLITHGOW), P.C., K.T., G.C.M.G., G.C.V.O. Sworn 1st January, 1901; recalled 9th May, 1902, left Melbourne 2nd July, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G (Act. Governor-General). Sworn 17th July, 1902.
Rt. Hon. HALLAM BARON TENNYSON, G.C.M.G. (Governor-General). Sworn 9th January, 1903; recalled 21st January, 1904.
Rt. Hon. HENRY STAFFORD NORTHCOTE, P.C., G.C.M.G., G.C.I.E., C.B. Sworn 21st January, 1904; recalled 8th September, 1908.
Rt. Hon. WILLIAM HUMBLE EARL OF DUDLEY, P.C., G.C.M.G., G.C.V.O., etc. Sworn 9th September, 1908; recalled 31st July, 1911.
Rt. Hon. THOMAS BARON DENMAN, P.C., G.C.M.G., K.C.V.O. Sworn 31st July, 1911.

(b) BARTON ADMINISTRATION, 1st January, 1901, to 23rd September, 1903.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. SIR EDMUND BARTON, P.C., G.C.M.G., K.C.
Attorney-General	Hon. ALFRED DEAKIN.
Home Affairs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 7/8 '03).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (from 7/8 '03).
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Trade and Customs	{ Rt. Hon. CHARLES CAMERON KINGSTON, P.C., K.C. (resigned 24/7 '03)
	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (from 7/8 '03).
Defence	{ The Hon. SIR JAMES ROBERT DICKSON, K.C.M.G. (died 10/1 '01).
	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (7/1 '01 to 7/8 '03).
	{ Hon. JAMES GEORGE DRAKE (from 7/8 '03).
Postmaster-General	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 17/1 '01).
	{ Hon. JAMES GEORGE DRAKE (5/2 '01 to 7/8 '03).
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (from 7/8 '03).
Vice-President Executive Council	Hon. RICHARD EDWARD O'CONNOR, K.C.
Without Portfolio	{ Hon. N. E. LEWIS (to 23/4 '01).
	{ Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G. (26/4 '01 to 7/8 '03).

(c) DEAKIN ADMINISTRATION, 24th September, 1903, to 26th April, 1904.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Trade and Customs	Hon. SIR WILLIAM JOHN LYNE, K.C.M.G.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. JAMES GEORGE DRAKE.
Postmaster-General	Hon. SIR PHILIP OAKLEY FYSH, K.C.M.G.
Defence	Hon. AUSTIN CHAPMAN.
Vice-President Executive Council	Hon. THOMAS PLAYFORD.

(d) WATSON ADMINISTRATION, 27th April to 17th August, 1904.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. JOHN CHRISTIAN WATSON.
External Affairs	Hon. WILLIAM MORRIS HUGHES.
Attorney-General	Hon. HENRY BOURNEſ HIGGINS, K.C.
Home Affairs	Hon. EGERTON LEE BATCHELOR.
Trade and Customs	Hon. ANDREW FISHER.
Defence	Hon. ANDERSON DAWSON.
Postmaster-General	Hon. HUGH MAHON.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.

(e) REID-McLEAN ADMINISTRATION, 18th August, 1904, to 4th July, 1905.

DEPARTMENTS.	MINISTERS.
External Affairs	Rt. Hon. GEORGE HOUSTOUN REID, P.C., K.C.
Trade and Customs	Hon. ALLAN McLEAN.
Attorney-General	Hon. SIR JOSIAH HENRY SYMON, K.C.M.G., K.C.
Treasury	Rt. Hon. SIR GEORGE TURNER, P.C., K.C.M.G.
Home Affairs	Hon. DUGALD THOMSON.
Defence	Hon. JAMES WHITESIDE McCAY.
Postmaster-General	Hon. SYDNEY SMITH.
Vice-President Executive Council	Hon. JAMES GEORGE DRAKE.

(f) SECOND DEAKIN ADMINISTRATION, 5th July, 1905, to 12th November, 1908.

DEPARTMENTS.	MINISTERS.
External Affairs	Hon. ALFRED DEAKIN.
Attorney-General	{ Hon. ISAAC ALFRED ISAACS, K.C. (to 11/10/'06). Hon. LITTLETON ERNEST GROOM (from 12/10/'06).
Trade and Customs	{ Hon. SIR WILLIAM JOHN LYNE, K.C.M.G. (to 29/7/'07). Hon. AUSTIN CHAPMAN (from 30/7/'07).
Treasurer	{ Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G. (to 29/7/'07) Hon. SIR WILLIAM JOHN LYNE (from 30/7/'07).
Postmaster-General	{ Hon. AUSTIN CHAPMAN (to 29/7/'07). Hon. SAMUEL MAUGER (from 30/7/'07).
Defence	{ Hon. THOMAS PLAYFORD (to 23/1/'07). Hon. THOMAS THOMSON EWING (from 24/1/'07).
Home Affairs	{ Hon. LITTLETON ERNEST GROOM (to 11/10/'06). Hon. THOMAS THOMSON EWING (from 12/10/'06 to 23/1/'07) Hon. JOHN HENRY KEATING (from 24/1/'07).
Vice-President Executive Council	{ Hon. THOMAS THOMSON EWING (to 11/10/'06). Hon. JOHN HENRY KEATING (from 12/10/'06 to 19/2/'07). Hon. ROBERT WALLACE BEST (from 20/2/'07).
Honorary Ministers	{ Hon. J. H. KEATING (from 5/7/'05 to 11/10/'06). Hon. S. MAUGER (from 12/10/'06 to 29/7/'07). Hon. J. HUME COOK (from 28/1/08).

(g) FISHER ADMINISTRATION, 13th November, 1908, to 2nd June, 1909.

DEPARTMENTS.	MINISTERS.
Treasurer	Hon. ANDREW FISHER.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	Hon. EGERTON LEE BATCHELOR.
Home Affairs	Hon. HUGH MAHON.
Postmaster-General	Hon. JOSIAH THOMAS.
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Vice-President Executive Council	Hon. GREGOR MCGREGOR.
Honorary Minister	Hon. JAMES HUTCHINSON.

(h) THIRD DEAKIN ADMINISTRATION, 2nd June, 1909, to 29th April, 1910.

DEPARTMENTS.	MINISTERS.
Prime Minister (without P'tfolio)	Hon. ALFRED DEAKIN.
Defence... ..	Hon. JOSEPH COOK.
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Trade and Customs	Hon. SIR ROBERT WALLACE BEST, K.C.M.G.
External Affairs	Hon. LITTLETON ERNEST GROOM.
Attorney-General	Hon. PATRICK McMAHON GLYNN.
Postmaster-General	Hon. SIR JOHN QUICK.
Home Affairs	Hon. GEORGE WARBURTON FULLER.
Vice-President Executive C'ncil	Hon. EDWARD DAVIS MILLEN.
Honorary Minister	Colonel The Hon. JUSTIN FOX GREENLAW FOXTON, C.M.G.

(i) SECOND FISHER ADMINISTRATION, 29th April, 1910, to 20th June, 1913.

DEPARTMENTS.	MINISTERS.
Treasurer	Rt. Hon. ANDREW FISHER, P.C.
Attorney-General	Hon. WILLIAM MORRIS HUGHES.
External Affairs	{ Hon. EGERTON LEE BATCHELOR (died Oct., 1911). Hon. JOSIAH THOMAS (from 14/10/11).
Postmaster-General	{ Hon. JOSIAH THOMAS (to 13/10/11). Hon. CHARLES EDWARD FRAZER (from 14/10/11).
Defence	Hon. GEORGE FOSTER PEARCE.
Trade and Customs	Hon. FRANK GWYNNE TUDOR.
Home Affairs	Hon. KING O'MALLEY.
Vice-President Executive C'ncil	Hon. GREGOR MCGREGOR.
Honorary Ministers	{ Hon. EDWARD FINDLEY. Hon. CHARLES EDWARD FRAZER (to 13/10/11). Hon. ERNEST ALFRED ROBERTS (from 23/10/11).

(j) FIRST COOK ADMINISTRATION, 20th June, 1913.

DEPARTMENTS.	MINISTERS.
Home Affairs	Hon. JOSEPH COOK.
Treasurer	Rt. Hon. SIR JOHN FORREST, P.C., G.C.M.G.
Attorney-General	Hon. WILLIAM HILL IRVINE, K.C.
Defence	Hon. EDWARD DAVIS MILLEN.
External Affairs	Hon. PATRICK McMAHON GLYNN, K.C.
Customs	Hon. LITTLETON ERNEST GROOM.
Postmaster-General	Hon. AGAR WYNNE
Vice-President Executive C'ncil	Hon. JAMES HIERS M'COLL.
Honorary Ministers	{ Hon. JOHN SINGLETON CLEMONS. Hon. WILLIAM HENRY KELLY.

A further list of the Ministers of State for the Commonwealth, arranged according to the respective offices occupied, is given in the section of this book dealing with the subject of *General Government* (see Section XXV.).

3. **The Course of Legislation.**—The actual legislation by the Commonwealth Parliament up to the end of the 1911 session is indicated in alphabetical order in "Vol. 10 of the Acts of the Parliament of the Commonwealth of Australia, passed in the session of 1911, with Tables, Appendices and Indexes." A "Chronological Table of Acts passed from 1901 to 1911, shewing how they are affected by subsequent legislation or lapse of time" is also given, and further "A Table of Commonwealth Legislation," for the same period, "in relation to the several provisions of the Constitution," is furnished. Reference may be made to these for complete information. The nature of Commonwealth legislation, up to October, 1913, and its relation to the several provisions of the Constitution, are set forth in the following tabular statement:—

**ANALYTIC TABLE OF COMMONWEALTH LEGISLATION
FROM 1901 to OCTOBER, 1913, IN RELATION TO THE SEVERAL PROVISIONS
OF THE CONSTITUTION.¹**

Section of Constitution.	Short Title of Commonwealth Act. ²
	AMENDMENT OF THE CONSTITUTION.
	Constitution Alteration (Senate Elections) 1906.
	Constitution Alteration (State Debts) 1909.
	PARLIAMENTARY AND ELECTORAL LAW.
8—30	PARLIAMENTARY FRANCHISE— Commonwealth Franchise Act 1902.
9—34	ELECTIONS— Commonwealth Electoral Act 1902-1911. Senate Elections Act 1903.
24	DETERMINATION OF NUMBER OF MEMBERS OF HOUSE OF REPRESENTATIVES— Representation Act 1905.
47	DISPUTED ELECTIONS AND QUALIFICATIONS— Commonwealth Electoral Act 1902-1911, Part XVI. Disputed Elections and Qualifications Act 1907.
48	ALLOWANCES TO MEMBERS— <i>Parliamentary Allowances Act 1902.*</i> Parliamentary Allowances Act 1907.
49	PRIVILEGES OF PARLIAMENT— Parliamentary Papers Act 1908.
	GENERAL LEGISLATION.
51—(i.)	TRADE AND COMMERCE—EXTERNAL AND INTERSTATE— Sea Carriage of Goods Act 1904 [<i>Bills of Lading</i>]. Secret Commissions Act 1905. Commerce (Trade Descriptions) Act 1905 [<i>Merchandise Marks</i>]. Australian Industries Preservation Act 1906-1910 [<i>Trusts and Dumping</i>]. Spirits Act 1906. <i>Seamen's Compensation Act 1909.*</i> Customs (Inter-State Accounts) Act 1910. Northern Territory Acceptance Act 1910 (s. 13) Seamen's Compensation Act 1911.
(ii.)	TAXATION— <i>Machinery Acts</i> — Customs Act 1901-1910. Beer Excise Act 1901-1912. Distillation Act 1901. Excise Act 1901. Spirits Act 1906. Excise Procedure Act 1907. Australian Notes Act 1910 (s. 12). Land Tax Assessment Act 1910-1912. <i>Taxing Acts</i> — <i>Customs Tariff 1902.*</i> <i>Customs Tariff 1906 [Agricultural Machinery].*</i> Customs Tariff (South African Preference) 1906; amended by Customs Tariff 1908 (s. 9). Customs Tariff 1908; amended by Customs Tariff Amendment 1908, and Customs Tariff 1910, and Customs Tariff 1911.

1. This Table has been prepared by the Secretary of the Attorney-General's Department
Robert Randolph Garran, Esquire, M.A., C.M.G., Barrister-at-Law, etc.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	TAXATION—Continued. Excise Tariff 1902; <i>amended by</i> Sugar Rebate Abolition Act 1903, <i>Excise Tariff 1905; * Excise Tariff (Amendment) 1906,*</i> Excise Tariff 1908; and <i>Excise (Sugar) Act 1910.*</i> Excise Tariff 1906 [<i>Agricultural Machinery</i>]; 1906 [<i>Spirits</i>]. Excise Tariff 1908; <i>amended by</i> Excise Tariff (Starch) 1908. Bank Notes Tax Act 1910. Land Tax Act 1910. Sugar Excise Repeal Act 1912. Excise Tariff 1913.
51—(iii.)	BOUNTIES ON PRODUCTION OR EXPORT— Sugar Bounty Acts 1903, 1905*, 1910*, 1912.* Bounties Act 1907-1912. Manufactures Encouragement Act 1908-1912. Shale Oils Bounties Act 1910. Sugar Bounty Abolition Act 1912. Wood Pulp and Rock Phosphates Bounties Act 1912. Sugar Bounty Act 1913.
(iv.)	BORROWING MONEY ON THE PUBLIC CREDIT OF THE COMMON- WEALTH— Commonwealth Inscribed Stock Act 1911-1912. Loan Act 1911, 1912.
(v.)	POSTAL, TELEGRAPHIC, AND TELEPHONIC SERVICES— Post and Telegraph Act 1901-1912. Post and Telegraph Rates Act 1902-1911. Wireless Telegraphy Act 1905. Tasmanian Cable Rates Act 1906. Telegraph Act 1909. Postal Rates Act 1910. Purchase Telephone Lines Acquisition Act 1911. Pacific Cable Act 1911.
(vi.)	NAVAL AND MILITARY DEFENCE— Naval Agreement Act 1903-1912. Defence Act 1903-1912. Telegraph Act 1909. Naval Defence Act 1910-1912.
(vii.)	LIGHTHOUSES, LIGHTSHIPS, BEACONS AND BUOYS— Lighthouses Act 1911.
(viii.)	ASTRONOMICAL AND METEOROLOGICAL OBSERVATIONS— Meteorology Act 1906.
(ix.)	QUARANTINE— Quarantine Act 1908-1912.
(xi.)	CENSUS AND STATISTICS— Census and Statistics Act 1905.
(xii.)	CURRENCY, COINAGE, AND LEGAL TENDER— Coinage Act 1909. Australian Notes Act 1910-1911.
(xiii.)	BANKING, OTHER THAN STATE BANKING, ETC.— Commonwealth Bank Act 1911.
(xiv.)	INSURANCE— Life Assurance Companies Act 1905. Marine Insurance Act 1909.
(xvi.)	BILLS OF EXCHANGE AND PROMISSORY NOTES— Bills of Exchange Act 1909-1912.
(xviii.)	COPYRIGHT, PATENTS, DESIGNS, AND TRADE MARKS— Customs Act 1901-1910 (s. 52 (a), 57). Patents Act 1903-1909. Trade Marks Act 1905-1912. <i>Copyright Act 1905.*</i> Copyright Act 1912. Designs Act 1906-1912. Patents, Trade Marks and Designs Act 1910.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
(xix.)	NATURALIZATION AND ALIENS— Naturalization Act 1903.
(xxiii.)	INVALID AND OLD-AGE PENSIONS— Invalid and Old-age Pensions Act 1908-1912.
(xxiv.)	SERVICE AND EXECUTION THROUGHOUT COMMONWEALTH OF PROCESS AND JUDGMENTS OF STATE COURTS— <i>Service and Execution of Process Act 1905.*</i> Service and Execution of Process Act 1901-1912.
(xxv.)	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
(xxvi.)	PEOPLE OF ANY RACE, OTHER THAN ABORIGINAL—SPECIAL LAWS— Pacific Island Labourers Act 1901-1906. Commonwealth Franchise Act 1902 (s. 4). Naturalization Act 1903 (s. 5).
(xxvii.)	IMMIGRATION AND EMIGRATION— Immigration Act 1901-1912. Pacific Island Labourers Act 1901-1906. Contract Immigrants Act 1905. Emigration Act 1910.
(xxix.)	EXTERNAL AFFAIRS— Extradition Act 1903. High Commissioner Act 1909.
51—(xxx.)	RELATIONS WITH PACIFIC ISLANDS— Pacific Island Labourers Act 1901-1906.
(xxxi.)	ACQUISITION OF PROPERTY FOR PUBLIC PURPOSES— <i>Property for Public Purposes Acquisition Act 1901.*</i> <i>Seat of Government Act 1904.*</i> Lands Acquisition Act 1906. Lands Acquisition Act 1912. Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910 (s. 10). Northern Territory (Administration) Act 1910.
(xxxii.)	CONTROL OF RAILWAYS FOR DEFENCE PURPOSES— Defence Act 1903-1912 (ss. 64-66, 80, 124).
(xxxiv.)	RAILWAY CONSTRUCTION AND EXTENSION IN ANY STATE WITH THE CONSENT OF THAT STATE— Kalgoorlie to Port Augusta Railway Act 1911-1912.
(xxxv.)	CONCILIATION AND ARBITRATION FOR THE PREVENTION AND SETTLEMENT OF INDUSTRIAL DISPUTES EXTENDING BEYOND THE LIMITS OF ANY ONE STATE— Commonwealth Conciliation and Arbitration Act 1904-1911.
(xxxix.)	MATTERS INCIDENTAL TO THE EXECUTION OF POWERS— Acts Interpretation Act 1901. <i>Punishment of Offences Act 1901.*</i> Acts Interpretation Act 1904. Amendments Incorporation Act 1905. Rules Publication Act 1903. Commonwealth Public Service Act 1902-1911. Jury Exemption Act 1905. Royal Commissions Act 1902-1912. Evidence Act 1905. Commonwealth Salaries Act 1907. Excise Procedure Act 1907. Statutory Declarations Act 1911. Arbitration (Public Service) Act 1911. Commonwealth Inscribed Stock Act 1911-1912. Maternity Allowance Act 1912. Commonwealth Workmen's Compensation Act 1912. Officers' Compensation Act 1912.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
EXECUTIVE GOVERNMENT.	
67	APPOINTMENT AND REMOVAL OF OFFICERS— Commonwealth Public Service Act 1902-1911. Papua Act 1905 (s. 19). Defence Act 1909 (s. 13). High Commissioner Act 1909 (ss. 8, 9). Northern Territory Acceptance Act 1910 (ss. 11, 12).
THE JUDICATURE.	
71—80	CONSTITUTION AND PROCEDURE OF THE HIGH COURT— Judiciary Act 1903-1912. High Court Procedure Act 1903, <i>amended by</i> High Court Procedure Amendment Act 1903.
73	APPELLATE JURISDICTION OF THE HIGH COURT— Judiciary Act 1903-1910. Papua Act 1905 (s. 43). Inter-State Commission Act 1912 (s. 42). Land Tax Assessment Act 1910-1912 (s. 46).
76	ORIGINAL JURISDICTION OF HIGH COURT— (i.) (1) <i>In matters arising under the Constitution or involving its interpretation</i> Judiciary Act 1903-1912 (ss. 23, 30). (ii.) (2) <i>In matters arising under Laws made by the Parliament—</i> Customs Act 1901-1910 (ss. 221, 227, 245). Excise Act 1901 (ss. 109, 115, 134). Post and Telegraph Act 1901-1912 (ss. 29, 43). <i>Property for Public Purposes Acquisition Act 1901*</i> (ss. 12-17, 25, 52, 55b, 58). Commonwealth Electoral Act 1902-1911 (ss. 193, 206aa). Defence Act 1903-1912 (s. 91). Patents Act 1903-1909 (ss. 47, 58, 67, 75-77, 84-87a, 111). Commonwealth Conciliation and Arbitration Act 1904-1911 (s. 31). Trade Marks Act 1905 (ss. 34, 35, 44, 45, 70-72, 95). Australian Industries Preservation Act 1906-1910 (ss. 10, 11, 13, 21, 22, 26). Referendum (Constitution Alteration) Act 1906 (ss. 27, 31). Lands Acquisition Act 1906 (ss. 10, 11, 24, 36-39, 45, 46, 50, 54, 56, 59). Disputed Elections and Qualifications Act 1907 (ss. 2, 6).
77—(ii.)	EXCLUDING JURISDICTION OF STATE COURTS— Judiciary Act 1903-1912 (ss. 38, 38A, 39, 57, 59).
(iii.)	INVESTING STATE COURTS WITH FEDERAL JURISDICTION— Customs Act 1901-1910 (ss. 221, 227, 245). Excise Act 1901 (ss. 109, 115, 134). Post and Telegraph Act 1901-1910 (ss. 29, 43). <i>Punishment of Offences Act 1901.*</i> Commonwealth Electoral Act 1902-1911 (s. 193). <i>Claims against the Commonwealth Act 1902.*</i> Defence Act 1903-1912 (s. 91). Judiciary Act 1903-1912 (ss. 17, 39, 68). Patents Act 1903-1909 (ss. 30, 47, 58, 67, 75-77, 84-87a, 111). Trade Marks Act 1905 (ss. 34, 35, 44, 45). <i>Copyright Act 1905 (s. 60, 73).*</i> Designs Act 1906 (s. 25, 39). Copyright Act 1912 (ss. 14-17). Land Tax Assessment Act 1910-1912 (s. 44).
78	RIGHT TO PROCEED AGAINST COMMONWEALTH OR STATE— Judiciary Act 1903-1912 (ss. 56-67).

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

Section of Constitution.	Short Title of Commonwealth Act.*
	FINANCE.
81	APPROPRIATION OF MONEYS— Appropriation and Supply Acts 1901-1912. Audit Act 1901-1912 (ss. 36-37, 62a).
83	PAYMENT OF MONEYS— Audit Act 1901-1912 (ss. 31-37, 62a).
93	CREDITING OF REVENUE AND DEBITING OF EXPENDITURE— Surplus Revenue Acts 1908, 1909.
94	DISTRIBUTION OF SURPLUS REVENUE— Surplus Revenue Acts, 1908, 1909, 1910.
96	ASSISTANCE TO STATES— Tasmania Grant Act 1912.
97	AUDIT OF PUBLIC ACCOUNTS— Audit Act 1901-1912.
101-104	INTER-STATE COMMISSION— Inter-State Commission Act 1912.
	THE STATES.
118	RECOGNITION OF STATE LAWS, RECORDS, ETC.— State Laws and Records Recognition Act 1901.
119	PROTECTION OF STATES FROM INVASION AND VIOLENCE— Defence Act 1903-1912 (s. 51).
	TERRITORIES.
122	GOVERNMENT OF TERRITORIES— Papua Act 1905. Wireless Telegraphy Act 1905. Seat of Government Acceptance Act 1909. Patents Act 1903-1909 (s. 4a). Northern Territory Acceptance Act 1910. Seat of Government (Administration) Act 1910. Northern Territory (Administration) Act 1910. Pine Creek to Katherine River Railway Survey Act 1912.
	MISCELLANEOUS.
125	STAT OF GOVERNMENT— <i>Seat of Government Act 1904.*</i> Seat of Government Act 1908. Seat of Government Acceptance Act 1909. Seat of Government (Administration) Act 1910.
128	ALTERATION OF CONSTITUTION— Referendum (Constitution Alteration) Act 1906-1912. Constitution Alteration (Senate Elections) Act 1906. Constitution Alteration (State Debts) Act 1909.

* Acts whose short titles are printed in italics with a * have been repealed or have expired.

SECTION III.

PHYSIOGRAPHY.

§ 1. General Description of Australia.

1. **Geographical Position.**—The Australian Commonwealth, which includes the island continent of Australia proper and the island of Tasmania, is situated in the Southern Hemisphere, and comprises in all an area of about 2,974,581 square miles, the mainland alone containing about 2,948,366 square miles. Bounded on the west and east by the Indian and Pacific Oceans respectively, it lies between longitudes 113° 9' E. and 153° 39' E., while its northern and southern limits are the parallels of latitude 10° 41' S. and 39° 8' S., or including Tasmania, 43° 39' S. On its north are the Timor and Arafura Seas and Torres Strait, on its south the Southern Ocean and Bass Strait.¹

(i.) *Tropical and Temperate Regions.* Of the total area of Australia the lesser portion lies within the tropics. Assuming, as is usual, that the latitude of the Tropic of Capricorn is 23° 30' S.,² the areas within the tropical and temperate zones are approximately as follows :—

**AREAS OF TROPICAL AND TEMPERATE REGIONS
OF STATES WITHIN TROPICS.**

Areas.	Queensland.	Western Australia.	Northern Territory.	Total.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Within Tropical Zone ...	359,000	364,000	426,320	1,149,320
Within Temperate Zone ...	311,500	611,920	97,800	1,020,720
Ratio of Tropical part to whole State ...	0.535	0.373	0.814	0.530
Ratio of Temperate part to whole State ...	0.465	0.627	0.186	0.470

Thus the tropical part is roughly about one-half (0.530) of the three territories mentioned above, or about five-thirteenths of the whole Commonwealth (0.386). See hereafter Meteorology 3.

2. **Area of Australia compared with that of other Countries.**—That the area of Australia is greater than that of the United States of America, that it is four-fifths of that of Canada, that it is more than one-fourth of the area of the whole of the British Empire, that it is nearly three-fourths of the whole area of Europe, that it is more than 25 times as large as any one of the following, viz., the United Kingdom, Hungary, Italy, the Transvaal, and Ecuador, are facts which are not always adequately realised. It is this great size, taken together with the fact of the limited population, that gives to the problems of Australian development their unique character, and its clear comprehension is essential in any attempt to understand those problems.

1. The extreme points are "Steep Point" on the west, "Cape Byron" on the east, "Cape York" on the north, "Wilson's Promontory" on the south, or, if Tasmania be included, "South East Cape." The limits, according to the 1903-4 edition of "A Statistical Account of Australia and New Zealand," p. 2, and, according to Volume XXV. of the "Encyclopædia Britannica," tenth edition, p. 787, are respectively 113° 5' E., 153° 16' E., 10° 39' S., and 39° 11½' S., but these figures are obviously defective. A similar inaccuracy appears in the XI. edition of the Encyclopædia.

2. Its correct value for 1914 is 23° 27' 1" .70, and it decreases about 0".47 per annum.

The relative magnitudes may be appreciated by a reference to the following table, which shows how large Australia is compared with the countries referred to, or *vice versa*. Thus, to take line 1, we see that Europe is about $1\frac{3}{10}$ times (1.29778) as large as Australia, or that Australia is about three-quarters (more accurately 0.77) of the area of Europe.

SIZE OF AUSTRALIA IN COMPARISON WITH THAT OF OTHER COUNTRIES.

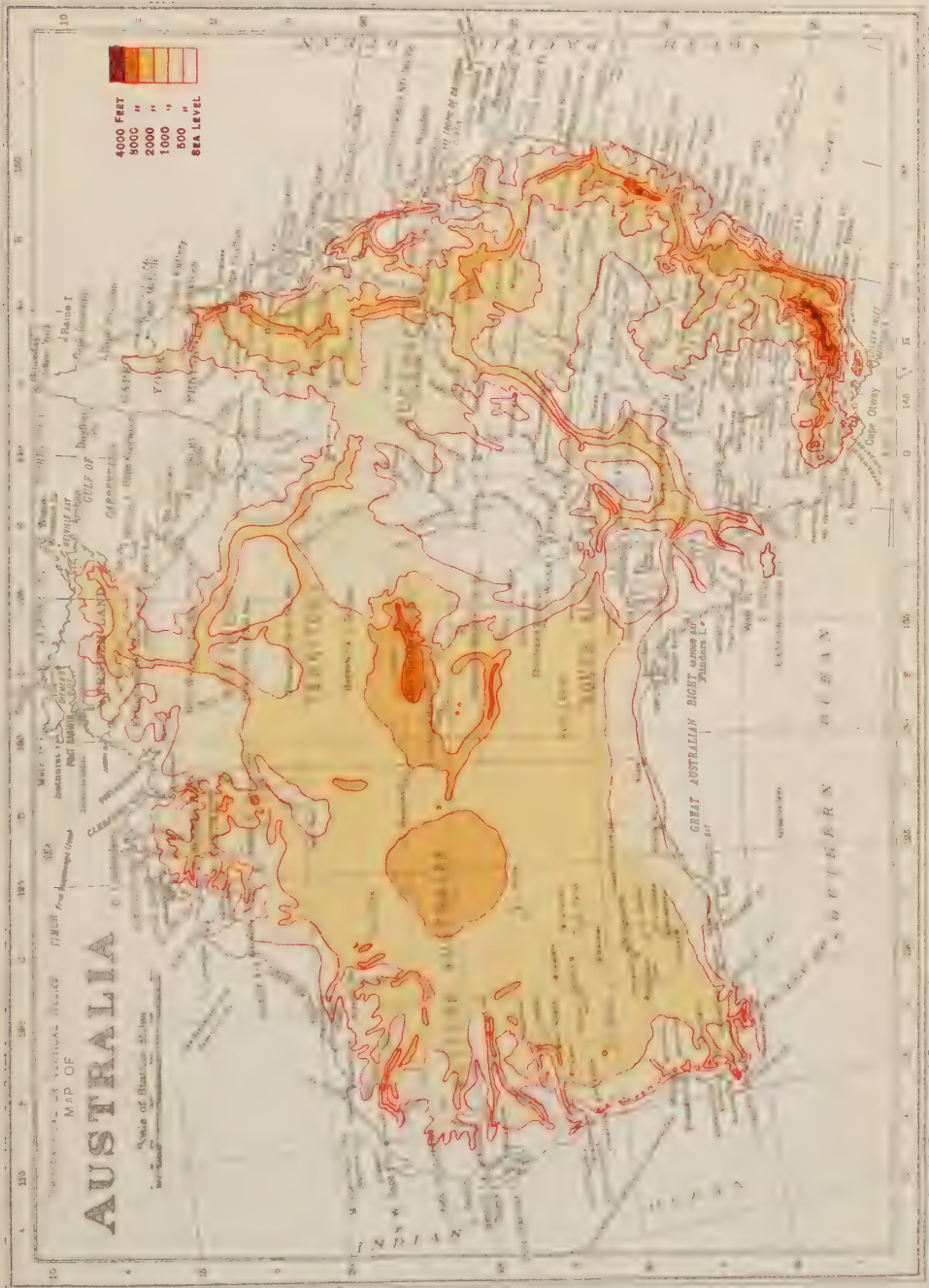
Commonwealth of Australia				2,974,581 square miles.		
Country.				Area.	Australian Commonwealth in comparison with—	In comparison with Australian C'wealth.
Continents—				Sq. miles.		
Europe	...	...	...	3,860,368	0.77	1.29778
Asia	...	...	...	16,978,885	0.17	5.70799
Africa	...	...	...	11,201,439	0.25	3.76571
North and Central America and West Indies	...	...	...	8,543,253	0.34	2.87208
South America	...	...	...	7,423,882	0.40	2.49577
Australasia and Polynesia	...	...	...	3,462,418	0.85	1.16400
Total, exclusive of Arctic and Antarctic Conts.				51,470,245	0.05	17.30335
Europe—						
Russia (inclusive of Poland, Ciscaucasia & Finland)	...	...	...	2,122,557	1.40	0.71356
Austria-Hungary (incl. of Bosnia & Herzegovina)	...	...	...	261,101	11.89	0.08777
Germany	...	...	...	208,780	14.25	0.07011
France	...	...	...	207,054	14.37	0.06969
Spain	...	...	...	194,783	15.27	0.06548
Sweden	...	...	...	172,876	17.21	0.05812
Norway	...	...	...	124,130	23.96	0.04173
United Kingdom	...	...	...	121,391	24.50	0.04081
Italy	...	...	...	110,659	26.88	0.03720
Turkey (inclusive of Crete)	...	...	...	68,715	43.29	0.02310
Denmark (inclusive of Iceland)	...	...	...	55,338	53.73	0.01861
Rumania	...	...	...	50,720	58.65	0.01705
Bulgaria	...	...	...	38,080	78.11	0.01280
Portugal	...	...	...	35,490	83.82	0.01193
Greece	...	...	...	25,014	118.91	0.00841
Servia	...	...	...	18,650	159.49	0.00627
Switzerland	...	...	...	15,976	186.22	0.00537
Netherlands	...	...	...	12,648	235.29	0.00425
Belgium	...	...	...	11,373	261.78	0.00382
Montenegro	...	...	...	3,630	819.67	0.00122
Luxemburg	...	...	...	998	2941.18	0.00034
Andorra	...	...	...	175	16997.61	0.00006
Malta	...	...	...	117	25423.76	0.00004
Liechtenstein	...	...	...	65	45793.55	0.00002
San Marino	...	...	...	38	78278.45	0.00001
Monaco	...	...	...	8	371822.63	...
Gibraltar	...	...	...	2	1487290.50	...
Total, Europe				3,860,368	0.77	1.29778
Asia—						
Russia (inclus. of Transcaucasia, Siberia, Steppes, Transcaspia, Turkestan and inland waters)	...	...	...	6,525,130	0.45	2.19364
China and Dependencies...	...	...	...	4,277,170	0.70	1.43791
British India...	...	...	...	1,097,901	2.70	0.36912
Independent Arabia	...	...	...	966,700	3.08	0.32499
Turkey (including Samos)	...	...	...	693,790	4.29	0.23324
Feudatory Indian States...	...	...	...	691,253	4.30	0.23238
Persia	...	...	...	628,000	4.74	0.21112

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison with Australian C'wealth.
ASIA (continued)—		Sq. Miles.	
Dutch East Indies ...	584,611	5.09	0.19654
Japan (and Dependencies) ...	260,919	11.04	0.08771
Afghanistan ...	250,000	11.90	0.08405
Siam ...	195,000	15.25	0.06555
Philippine Islands (inclusive of Sulu Archipelago) ...	127,853	23.27	0.04298
Laos ...	98,000	30.35	0.03295
Bokhara ...	83,000	35.83	0.02790
Oman ...	82,000	36.27	0.02757
British Borneo and Sarawak ...	73,106	40.68	0.02457
Nepal ...	54,000	55.10	0.01815
Annam ...	52,100	57.08	0.01752
Tonking ...	46,400	64.10	0.01560
Cambodia ...	45,000	66.10	0.01513
Federated Malay States ...	27,700	107.38	0.00931
Ceylon ...	25,332	117.37	0.00852
Khiva ...	24,000	123.94	0.00807
Cochin China ...	20,000	148.73	0.00672
Bhutan ...	20,000	148.73	0.00672
Aden and Dependencies ...	9,005	330.32	0.00303
Timor, etc. (Portuguese Indian Archipelago) ...	7,330	406.50	0.00246
Brunei ...	4,000	743.64	0.00134
Cyprus ...	3,584	833.33	0.00120
Goa, Damao, and Diu ...	1,638	1818.18	0.00055
Straits Settlements ...	1,600	1851.85	0.00054
Sokotra and Kuria Muria Islands ...	1,382	2152.22	0.00046
Hong Kong and Dependencies ...	405	7344.64	0.00013
Wei-hai-wei ...	285	10623.50	0.00009
Bahrein Islands ...	250	11898.32	0.00008
French India (Pondicherry, etc.) ...	196	15176.43	0.00007
Kiauchau ...	193	15412.33	0.00006
Labuan ...	30	99152.70	0.00001
Italian Concession, Tientsin ...	18	165254.50	0.00001
Macao, etc. ...	4	743643.25	...
Total, Asia ...	16,978,885	0.17	5.70799
Africa—			
French Sahara ...	1,544,000	1.93	0.51907
Turkey (inclusive of Egypt and Soudan) ...	1,384,520	2.14	0.46545
Belgian Congo ...	909,654	3.27	0.30582
French Congo ...	669,000	4.46	0.22491
Angola ...	484,800	6.14	0.16298
Union of South Africa ...	473,184	6.28	0.15907
Rhodesia ...	439,575	6.77	0.14778
Abyssinia ...	432,432	6.88	0.14538
Tripoli and Benghezi ...	398,900	7.45	0.13410
German East Africa ...	384,000	7.74	0.12909
Mauretania ...	344,967	8.62	0.11597
Algeria (including Algerian Sahara) ...	343,500	8.66	0.11548
German South-west Africa ...	322,450	9.23	0.10840
Portuguese East Africa ...	293,400	10.14	0.09864
Bechuanaland Protectorate ...	275,000	10.82	0.09245
Northern Nigeria Protectorate ...	256,400	11.60	0.08620
Madagascar ...	228,000	13.05	0.07665
Uganda Protectorate ...	223,500	13.31	0.07514
Morocco ...	219,000	13.58	0.07362
British East Africa Protectorate ...	202,000	14.72	0.06790
Kamerun ...	191,130	15.56	0.06425
Italian Somaliland ...	139,430	21.34	0.04687
Ivory Coast ...	130,000	22.87	0.04370

Country.	Area.	Australian Commonw'lth in comparison with—	In com- parison with Australian C'wealth.
AFRICA (continued)—			
	Sq. miles.		
French Guinea	95,000	31.31	0.03194
Gold Coast Protectorate (with North. Territories) ...	80,000	37.18	0.02689
Southern Nigeria and Protectorate	79,880	37.23	0.02685
Senegal	74,000	40.20	0.02488
Rio de Oro, etc.	73,000	40.75	0.02454
Senegambia and Niger	72,000	41.31	0.02420
British Somaliland	68,000	43.74	0.02286
Dahomey	65,000	45.77	0.02185
Tunis	50,000	59.49	0.01681
Eritrea	45,800	64.95	0.01540
Nyasaland Protectorate	43,608	68.21	0.01466
Liberia	40,000	74.36	0.01345
Togoland	33,700	88.26	0.01133
Sierra Leone and Protectorate	31,624	94.06	0.01063
Portuguese Guinea	13,940	213.22	0.00469
Spanish Guinea (Rio Muni, etc.)	12,000	247.88	0.00403
Basutoland	11,716	253.89	0.00393
Swaziland	6,536	455.10	0.00219
French Somali Coast	5,790	513.74	0.00194
Gambia and Protectorate	4,500	661.02	0.00151
Cape Verde Islands	1,480	2000.00	0.00050
Zanzibar	1,020	2941.18	0.00034
Réunion	965	3082.46	0.00032
Mauritius and Dependencies	850	3499.50	0.00028
Fernando Po, etc.	814	3654.28	0.00027
Comoro Islands	620	4761.91	0.00021
St. Thomas and Prince Islands	360	8262.73	0.00012
Seychelles	160	19830.54	0.00005
Mayotte, etc....	140	21247.01	0.00005
St. Helena	47	63288.95	0.00002
Ascension	34	87487.65	0.00001
Spanish North and West Africa	13	228813.92	...
Total, Africa	11,201,439	0.25	3.76571
North and Central America and West Indies—			
Canada	3,729,665	0.80	1.25385
United States (exclusive of Alaska, &c.)	2,973,890	1.00	0.99976
Mexico	767,005	3.88	0.25785
Alaska	590,884	5.03	0.19864
Newfoundland and Labrador	162,734	18.28	0.05471
Nicaragua	49,200	60.46	0.01654
Guatemala	48,290	61.61	0.01623
* Greenland	46,740	63.65	0.01571
Honduras	46,250	64.31	0.01555
Cuba	44,164	67.35	0.01484
Costa Rica	23,000	129.32	0.00773
San Domingo	18,045	164.74	0.00607
Haiti	10,204	291.55	0.00343
British Honduras	8,598	345.96	0.00289
Salvador	7,225	411.52	0.00243
Bahamas	4,403	675.58	0.00148
Jamaica	4,200	708.23	0.00141
Porto Rico	3,606	824.90	0.00121
Trinidad and Tobago	1,868	1592.39	0.00063
Leeward Islands	701	4243.33	0.00024
Guadeloupe and Dependencies	688	4323.52	0.00023
Windward Islands	527	5644.86	0.00017

* Danish colony only.

Country.	Area.	Australian Commonwealth in comparison with—	In com- parison. Australian C'wealth.
N. & C. AMERICA & W. INDIES (continued)—			
	Sq. miles.		
Curaçao and Dependencies ...	403	7381.09	0.00014
Martinique ...	381	7807.30	0.00013
Turks and Caicos Islands ...	166	17925.18	0.00005
Barbados ...	166	17925.18	0.00005
Danish West Indies ...	138	21554.94	0.00005
St. Pierre and Miquelon ...	93	31984.74	0.00003
Bermudas ...	19	156556.89	...
Total, N. and C. America and W. Indies ...	8,543,253	0.34	2.87208
South America—			
Brazil (inclusive of Acré)... ..	3,292,991	0.90	1.10704
Argentine Republic	1,135,840	2.62	0.38185
Peru	695,733	4.28	0.23389
Bolivia	608,195	4.89	0.20446
Colombia	438,436	6.78	0.14739
Venezuela	393,976	7.55	0.13244
Chile	292,580	10.17	0.09836
Paraguay	171,204	17.37	0.05755
Ecuador	116,000	25.64	0.03900
British Guiana	90,277	32.95	0.03035
Uruguay	72,210	41.19	0.02428
Dutch Guiana	46,060	64.60	0.01548
Panamá	32,380	91.86	0.01088
French Guiana	30,500	97.56	0.01025
Falkland Islands	6,500	456.62	0.00219
South Georgia	1,000	2974.58	0.00034
Total, South America	7,423,882	0.40	2.49577
Australasia and Polynesia—			
Commonwealth of Australia	2,974,581	1.00	1.00000
Dutch New Guinea	151,789	19.60	0.05103
New Zealand and Dependencies	104,751	28.39	0.03522
Papua	90,540	32.85	0.03044
Kaiser Wilhelm Land	70,000	42.50	0.02353
Bismarck Archipelago	20,000	148.73	0.00672
British Solomon Islands	14,800	204.36	0.00497
New Caledonia and Dependencies	8,548	347.99	0.00287
Fiji	7,435	400.08	0.00250
Hawaii	6,449	460.83	0.00217
German Solomon Islands, etc.	5,160	576.46	0.00173
New Hebrides	5,000	594.92	0.00168
French Establishments in Oceania	1,520	1960.78	0.00051
German Samoa	1,000	2974.58	0.00034
Tonga	390	7627.13	0.00013
Guam	200	14872.91	0.00007
Gilbert Islands	166	17919.16	0.00006
Samoa (U.S.A. part)	79	37652.92	0.00003
Norfolk Island	10	297458.10	...
Total, Australasia and Polynesia	3,462,418	0.85	1.16400
British Empire...	11,447,954	0.26	3.84859





3. **Relative Size of Political Subdivisions.**—As already stated, Australia consists of six States and the Northern and Federal Capital Territories. The areas of these, in relation to one another and to the total of Australia, are shewn in the following table:—

RELATIVE SIZES OF STATES AND COMMONWEALTH.

State.	Area.	Ratio which the Area of each State and Territory bears to that of other States, Territories and Commonwealth.							
		N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N. Ter.	C'wth.
	Sq. miles.								
New South Wales	309,460	1.000	3.522	0.462	0.814	0.317	11.806	0.591	0.104
Victoria	87,884	0.284	1.000	0.131	0.231	0.090	3.352	0.168	0.030
Queensland	670,500	2.166	7.629	1.000	1.764	0.687	25.577	1.280	0.225
South Australia	380,070	1.228	4.325	0.567	1.000	0.389	14.498	0.726	0.128
West. Australia	975,920	3.153	11.105	1.455	2.568	1.000	37.228	1.964	0.328
Tasmania	26,215	0.085	0.298	0.039	0.069	0.027	1.000	0.050	0.009
North. Territory	523,620	1.691	5.958	0.781	1.378	0.537	19.974	1.000	0.176
Fed. Capital Ter.	912	0.003	0.010	0.001	0.003	0.001	0.034	0.002	0.000 ¹
Commonwealth	2,974,581	9.610	33.847	4.436	7.827	3.048	113.469	5.681	1.000

1. The correct decimal is 0.0003.

Thus, looking at the top line, New South Wales is seen to be over three-and-a-half times as large as Victoria (3.522) and less than one-half the size of Queensland (0.462); or again, looking at the bottom line, the Commonwealth is shewn to be more than nine-and-a-half times as large as New South Wales (9.610), and nearly thirty-four times as large as Victoria (33.847).

These relative magnitudes are shewn in the small diagram below. It may be added that Papua (or British New Guinea), with its area of 90,540 square miles, is 0.030 of the Area of the Commonwealth. The comparatively small size of the Federal Capital Territory prevents its being shewn in this diagram.

N.S.W.	V.	Qld.	S.A.	N.T.	W.A.	Tas.	
% of total 10	3	22	13	18	33	1	

4. **Coastal-Configuration.**—There are no striking features in the configuration of the coast; the most remarkable indentations are the Gulf of Carpentaria on the north and the Great Australian Bight on the south. The York Peninsula on the extreme north is the only other remarkable feature in the outline. In Year Book No. 1 an enumeration of the features of the coast-line of Australia was given (see pp. 60 to 68).

(i.) *Coast-line.* The lengths of coast-line, exclusive of minor indentations, both of each State and of the whole continent, are shewn in the following table:—

SQUARE MILES OF TERRITORY PER MILE OF COAST LINE.

STATES AND CONTINENT.

State.	Coast-line.	Area ÷ Coast-line.	State.	Coast-line.	Area ÷ Coast-line.
	Miles.	Sq. miles.		Miles	Sq. miles.
New South Wales ¹	700	443	South Australia ...	1,540	247
Victoria ...	680	129	Western Australia	4,350	224
Queensland ...	3,000	223	Continent ² ...	11,310	261
Northern Territory	1,040	503	Tasmania ...	900	29

1. Including Federal Capital Territory.

2. Area 2,948,366 square miles.

For the entire Commonwealth this gives a coast-line of 12,210 miles, and an average of 244 square miles for one mile of coast line. According to Strelbitski, Europe has only 75 square miles of area to each mile of coast line, and, according to recent figures, England and Wales have only one-third of this, viz., 25 square miles.

(ii.) *Historical Significance of Coastal Names.* It is interesting to trace the voyages of some of the early navigators by the names bestowed by them on various coastal features—thus Dutch names are found on various points of the Western Australian coast, in Nuyt's Archipelago, in the Northern Territory and in the Gulf of Carpentaria; Captain Cook can be followed along the coasts of New South Wales and Queensland; Flinders' track is easily recognised from Sydney southwards, as far as Cape Catastrophe, by the numerous Lincolnshire names bestowed by him; and the French navigators of the end of the eighteenth and the beginning of the nineteenth century have left their names all along the Western Australian, South Australian, and Tasmanian coasts.

5. *Geographical Features of Australia.*—In each preceding issue of this Year Book, fairly complete information has been given concerning some special geographical element. Thus No. 1 Year Book, pp. 60-68, contains an enumeration of Coastal features, No. 2, pp. 66-67, deals with Hydrology, No. 3, pp. 59-72, with Orography, No. 4, pp. 59-82, with the Lakes of Australia, No. 5, pp. 51-80, with the Islands of Australia, and No. 6, pp. 55-66 with the Mineral Springs of Australia. This practically completes the description of the ordinary physical features. The present issue contains a special article dealing with the geological history of Australia, particularly as regards the climatic changes evidenced therein. An orographical or vertical relief map of Australia will be found on p. 53.

§ 2. Salient Features in the Geological History of Australia, with Special Reference to Changes of Climate.*

(i.) *The Pre-Cambrian Age.* Rocks of definitely ascertained Pre-Cambrian age occupy a great area throughout Australia, while others, almost certainly of this age, underlie a vast extent of the surface of the continent. In South Australia and in the Northern Territory the association of fossiliferous Lower Cambrian strata with older schists defines the Pre-Cambrian age of the latter most satisfactorily. In Queensland, New South Wales, Victoria, Tasmania and Western Australia, lithological evidence points to the existence of Pre-Cambrian rocks; but stratigraphical and palæontological tests leave open the possibility of the beds belonging to some part of the Lower Palæozoic group. In South Australia three fairly well defined lithological series are represented by the rocks of Eyre's Peninsula, by those of northern Yorke's Peninsula, and by those of the Mount Lofty and Barossa Ranges respectively, which will probably be found to correspond with definite breaks in the geological sequence. The Mount Lofty and Barossa Range beds (Barossian series) are certainly altered sediments, including lime-

* Contributed by Professor W. G. Woolnough, D.Sc., University of Perth, W.A.

stones, but they yield no information as to climatic conditions in the Pre-Cambrian time. The same may be said of the Northern Territory beds. In most of the remaining Pre-Cambrian areas the rocks are granitoid in character, or else very highly metamorphosed crystalline schists.

(ii.) *The Cambrian Age.* Evidence as to climatic conditions in the Cambrian time is much more abundant and conclusive. In the Lower Cambrian beds near Adelaide there is developed a very important and extensive glacial series (Sturt River glacial beds). Some distance higher up in the series come limestones (Brighton limestones) and higher still great reefs of limestone (Archæocyathinae limestones). It is possible, though by no means certain, that these limestones may indicate a change of the climate. The Archæocyathinae limestones have certainly the *habit* of coral reefs, but the organisms are of so primeval a type that it would be rash to assume that they indicate a climate similar to that required for the growth of reef corals at the present day. In the Northern Territory, Cambrian time was ushered in by great volcanic activity. Then followed the deposition of immense beds of limestone, probably unsurpassed in extent anywhere in the world. Evidences of shallow water origin are not wanting, hence the accumulation of thousands of feet of limestone may be taken to indicate long continued subsidence. The upper beds of the Cambrian system (Roper River quartzites and Mount McMinns beds) are of very shallow water origin, and the predominance of red beds may indicate aridity of the adjacent continental surface.

(iii.) *The Ordovician Age.* In Ordovician time, deep sea water stretched over Southern Australia, and very constant and characteristic *graptolite* beds are widely distributed. This deep ocean did not cover the whole of the continent, since in the "Larapintine system" of Central Australia the facies of the Ordovician system is quite different. Here were very shallow water conditions, evidenced by the occurrence of pseudomorphs of common salt crystals. In all probability Northern and Western Australia were occupied by continental land at this time.

(iv.) *The Silurian Age.* During the Silurian period conditions changed considerably, and South-eastern Australia was covered by shallow sea water. Immense limestone beds occur at intervals from Tasmania to Northern Queensland; and, as these are built up largely of true reef-building corals, the inference of a warm climate is not without justification. Evidences of volcanic activity are widespread.

(v.) *The Devonian Age.* In early Devonian time the south-eastern corner of Australia was occupied by an immense range of acid volcanoes, which built up the Snowy River porphyries. They may have attained altitudes of upwards of 15,000 feet above sea level.

Lying upon their denuded surfaces, but still of Middle Devonian age, are extensive coralline limestone, probably indicating the existence of warm shallow seas. These limestones occur at intervals from Gippsland, through New South Wales to the Burdekin and Fanning Rivers of Queensland.

Late Devonian time was marked by instability of the land surface, and by rather rapid alternations of marine and terrestrial conditions. The occurrence of red beds may indicate aridity of climate, but no deposits of salt or gypsum were produced. The earliest abundant plant remains (*Lepidodendron australe*) belong to this stage.

(vi.) *The Carboniferous Age.* In Carboniferous time the instability of level noted above continued, and became even more pronounced, so that interbedded marine and freshwater strata are a feature of this formation. Towards the close of the period, too, volcanic activity became very widespread. The organic life of the time was abundant and varied; its abrupt cessation, and the strong contrast presented by the succeeding fauna and flora, indicate that a warm climate obtained during Carboniferous time.

(vii.) *The Permo-Carboniferous Age.* Permo-Carboniferous time witnessed a return of intense glacial conditions, perhaps the most intense that have ever visited Australia. Victoria, South Australia, parts of Tasmania, and nearly the whole of Western Australia were continental land. Over this continent stretched a great, slow-moving ice sheet, wearing, polishing, and scratching the rock surfaces, and transporting fragments for hundreds of miles. From the directions of the scratches it is clear that the main centre

of ice distribution in Eastern Australia lay to the south-west of Tasmania. That is to say, high continental land existed, at that time, not far from what is now the eastern end of Jeffrey's Deep. After reaching sea level, near the border between Victoria and New South Wales, the ice sheet broke up into icebergs and "rafted" great blocks of rock far to the northward. These erratics are abundant in the Hunter River coalfield and in the Macleay River district of New South Wales, and the icebergs floated well within the limits of the tropics in Queensland, Central Australia, and Western Australia.

There is a remarkable alternation of shallow water marine beds with freshwater beds in Australia. It is in these freshwater beds that the most extensive of our productive coal measures were developed. Glacial action was not continuous throughout the whole period, but, after the first great glacial epoch, passed away for a time, and reoccurred to a much more limited extent later. The fauna and flora of the Permo-Carboniferous system offer a contrast to those of the preceding period so marked that, as above mentioned, a stupendous change of climate must have occurred in the interval indicated by the unconformity between the two formations.

(viii.) *The Lower Mesozoic Age.* The Lower Mesozoic (Triassic or Trias-Jura) beds of Australia seem, for the most part, to follow those of Permo-Carboniferous age, with very little evidence of great changes in the distribution of land and sea. In New South Wales and in Western Australia there appears to have been continuity of sedimentation. Nevertheless, there is a most striking *life-break* between the two systems, which, in absence of evidence of great land movements or long lapse of time, must be taken to indicate an extensive and relatively rapid change of climate. All the Lower Mesozoic beds of Australia are of freshwater origin, and, in Queensland, Victoria, Tasmania, and South Australia, contain workable coal measures. On the western slopes of the Main Divide of Eastern Australia and in Western Australia they contain supplies of artesian water.

(ix.) *The Upper Mesozoic Age.* In Upper Mesozoic time (Cretaceous) there was a very extensive transgression of the sea over the continental surface. In all probability, Australia was severed into two or more great continental islands lying to the east and west of a large mediterranean sea. In this latter, and in the ocean waters beyond the islands, were laid down marine beds. Those of the mediterranean sea, widely developed in Queensland, Northern Territory, and South Australia, and to a smaller extent in New South Wales and Western Australia, supply vast quantities of artesian water.

(x.) *The Early Tertiary Age.* In early Tertiary time the whole continent was subjected to a tilting movement, rising on the north and subsiding on the south. The former portion became dry land, but the sea transgressed extensively over Tasmania, Victoria, South Australia, and Western Australia, and laid down thick beds of limestone. Climatic conditions appear to have been quite mild. Extensive volcanic eruptions occurred along the borders of the old cretaceous sea.

(xi.) *The Later Tertiary Age.* In later Tertiary time came the gradual uplift, expelling the sea from the continental surface, and causing the formation of extensive plateau surfaces. Volcanic action on a large scale was widespread, and, in Western Victoria and South-eastern South Australia, continued to a very recent date. That the climate of Australia was much moister during this period than it is at the present day is shewn by evidences of former great extension of lake basins now dry or much shrunken, and by the remains of gigantic extinct animals, including crocodiles and turtles, in the now desert areas of Central Australia.

A third great glacial epoch occurred during late Tertiary time. On this occasion, continental ice-sheets were not developed, but the highlands of Tasmania and of the Australian Alps were covered by ice-caps, which descended some 3000 feet below the present summit levels.

The latest phases of the geological history of Australia are to be read from the distribution of land forms. These indicate that earth movements of a plateau-forming character are still taking place; the separation of Tasmania and New Guinea from the mainland, and the development of the Great Barrier Reef of Queensland, are important incidents in this phase of geological history.

§ 3. The Fauna of Australia.

An authoritative article describing in some detail the principal features of the Fauna of Australia was given in Year Books No. 1 (see pp. 103 to 109) and No. 2 (see pp. 111 to 117), while a synoptical statement appeared in No. 3 (see pp. 73 to 76). Considerations of space will, however, preclude the inclusion in this issue of more than a passing reference to the subject.

§ 4. The Flora of Australia.

In Year Books No. 1 (see pp. 109 to 114) and No. 2 (see pp. 117 to 122) a fairly complete though brief account was given of the Flora of Australia, and in Year Book No. 3 similar information in a greatly condensed form will be found on pp. 76 to 78. Space in this issue will not permit of more than a mere reference to preceding volumes.

A special article dealing with Australian fodder plants, contributed by J. H. Maiden, Esq., F.L.S., Government Botanist of New South Wales, and Director of the Botanic Gardens, Sydney, appeared in Official Year Book No. VI., pp. 1190-6.

§ 5. Seismology in Australia.

A brief statement regarding the position of seismology and seismological record in Australia appears in Year Book No. 4, pp. 82 and 83.

Barisal Guns. Reference may be made here to an interesting pamphlet published by Dr. J. Burton Cleland, in which the author sums up the available information regarding the peculiar explosive or booming noises heard at times in Australia as well as in other parts of the world. As far as inland Australia, at all events, is concerned, it seems clear that the explosions are of earth origin, and are probably due to the sudden sundering of immense rock masses, either as a result of climatic influences, or through folding movements in the earth's crust.

§ 6. The Geology of Australia.

1. **General.**—Independent and authoritative sketches of the geology of each State were given in Year Books No. 1 (see pp. 73 to 103) and No. 2 (see pp. 78 to 111). Want of space has precluded the insertion of these sketches in the present issue of the Year Book, and it has not been considered possible to give anything like a sufficient account of the geology of Australia by presenting here a mere condensation of these sketches. Reference must, therefore, be made to either Year Book No. 1 or No. 2, *ut supra*.

2. **Geological Map of Australia.**—The map of the Geology of Australia on page 54. shews the geographical distribution of the more important geological systems and formations.

§ 7. Climate and Meteorology of Australia.¹

1. **Introductory.**—In preceding Year Books some account was given of the history of Australian meteorology, including reference to the development of magnetic observations and the equipment for the determination of various climatological records. (See Year Book No. 3, pp. 79, 80). In Year Book No. 4, pp. 84 and 87, will be found a short sketch of the creation and organisation of the Commonwealth Bureau of Meteorology and a resumé of the subjects dealt with at the Meteorological Conference of 1907. Space will not permit of the inclusion of this matter in the present issue.

2. **Meteorological Publications.**—The following publications are issued daily from the Meteorological Bureau, viz.:—(i.) Weather charts. (ii.) Rainfall maps. (iii.) Bulletins, Victorian and Interstate, shewing pressure, temperature, wind, rain, cloud extent, and weather.

1. Prepared from data supplied by the Commonwealth Meteorologist, H. A. Hunt, Esquire, F.R.Met.S.

The Bulletins of Climatology are as follows:—No. 1.—A general discussion of the climate and meteorology of Australia, illustrated by one map and diagrams. No. 2.—A discussion of the rainfall over Australia during the ten years (1897-1906) compared with the normal, illustrated by one map. No. 3.—Notes and statistics of the remarkable flood rains over south-eastern Australia during the winter of 1909, illustrated by five maps and diagrams. No. 4.—A discussion of the monthly and seasonal rainfall over Australia, illustrated by one map and diagram. No. 5.—An investigation into the possibility of forecasting the approximate winter rainfall for Northern Victoria, illustrated by two diagrams. No. 6.—The physiography of the proposed Federal Territory at Canberra, illustrated by a relief map and 21 plates. No. 7.—On the climate of the Yass-Canberra district, illustrated by one map. No. 8.—Physiography of Eastern Australia, with 28 text illustrations.

Commencing with January 1910, the "Australian Monthly Weather Report," containing statistical records from representative selected stations, with rain maps and diagrams, etc., is being published. Complete rainfall and other climatological data are published in annual volumes of meteorological statistics for each State separately.

3. General Description of Australia.—In the general description of Australia, page 48, it is pointed out that a considerable portion (0.530) of three divisions of the Australian Commonwealth is north of the tropic of Capricorn, that is to say, within the States of Queensland and Western Australia, and the Northern Territory, no less than 1,149,320¹ square miles belong to the tropical zone, and 1,020,720 to the temperate zone. The whole area of the Commonwealth within the temperate zone, however, is 1,825,261² square miles, thus the tropical part is about 0.386, or about five-thirteenths of the whole, or the "temperate" region is half as large again as the "tropical" (more accurately 1.591). By reason of its insular geographical position, and the absence of striking physical features, Australia is, on the whole, less subject to extremes of weather than are regions of similar area in other parts of the globe; and latitude for latitude Australia is, on the whole, more temperate.

The altitudes of the surface of Australia range up to a little over 7300 feet, hence its climate embraces a great many features, from the characteristically tropical to what is essentially alpine, a fact indicated in some measure by the name Australian Alps given to the southern portion of the great Dividing Range.

While on the coast the rainfall is often abundant and the atmosphere moist, in some portions of the interior the rainfall is very limited, and the atmosphere dry. The distribution of forest, as might be expected, and its climatic influence, is consequently very variable. In the interior there are on the one hand fine belts of trees, on the other there are large areas which are treeless, and where the air is hot and parched in summer. Again, on the coast, even as far south as latitude 35°, the vegetation is tropical in its luxuriance, and also somewhat so in character. Climatologically, therefore, Australia may be said to present a great variety of features. The various climatological characteristics will be referred to in detail.

4. Meteorological Divisions.—The Commonwealth Meteorologist has divided Australia, for climatological and meteorological purposes, into five divisions. The boundaries between these may be thus defined:—(a) Between divisions I. and II., the boundary between South and Western Australia, viz., the 129th meridian of east longitude; (b) between divisions II. and III., starting at the Gulf of Carpentaria, along the Norman River to Normanton, thence a straight line to Wilcannia on the Darling River, New South Wales; (c) between divisions II. and IV., from Wilcannia along the Darling River to its junction with the Murray; (d) between divisions II. and V., from

1. In the article "Australia" in the *Encyclopædia Britannica*, Vol. XXX., p. 796, this area is given as 1,145,000 square miles.

2. Given as 1,801,700 square miles in the work above quoted, where, however, the statistics are said "to refer only to the continental States of the Federation, not to Tasmania."

the junction of the Darling and Murray Rivers, along the latter to Encounter Bay; (e) between divisions III. and IV., starting at Wilcannia, along the Darling, Barwon, and Dumaresq Rivers to the Great Dividing Range, and along that range and along the watershed between the Clarence and Richmond Rivers to Evans Head on the east coast of Australia; (f) between divisions IV. and V., from the junction of the Darling and Murray Rivers along the latter to its junction with the Murrumbidgee, along the Murrumbidgee to the Tumut River, and along the Tumut River to Tumut, thence a straight line to Cape Howe; (g) division V. includes Tasmania.

The population included within these boundaries at the Census of the 3rd April, 1911, was approximately as follows:—

Division	I.	II.	III.	IV.	V.
Population	282,000	429,000	607,000	1,540,000	1,597,000

In these divisions the order in which the capitals occur is as follows:—(i.) Perth, (ii.) Adelaide, (iii.) Brisbane, (iv.) Sydney, (v.) Melbourne, (vi.) Hobart, and for that reason the climatological and meteorological statistics will be set forth in the indicated order in this publication.

(i.) *Special Climatological Stations.* The latitudes, longitudes, and altitudes of special stations, the climatological features of which are graphically represented hereinafter, are as follows:—

SPECIAL CLIMATOLOGICAL STATIONS.

Locality.	Height above Sea Level.	Latitude.		Longitude.		Locality.	Height above Sea Level.	Latitude.		Longitude.	
		S.	E.	S.	E.			S.	E.	S.	E.
Perth ...	197	31	57	115	51	Darwin ...	97	12	28	130	51
Adelaide ...	140	34	56	138	35	Daly Waters ...	700	16	16	133	23
Brisbane ...	137	27	28	153	2	Alice Springs ...	1926	23	38	133	37
Sydney ...	146	33	52	151	12	Dubbo ...	870	32	18	148	35
Melbourne ...	115	37	50	144	59	Laverton ...	1530	28	40	122	23
Hobart ...	160	42	53	147	20	Coolgardie ...	1402	30	57	121	10

5. *Temperatures.*—In respect of Australian temperatures generally it may be pointed out that the isotherm for 70° Fahrenheit extends in South America and South Africa as far south as latitude 33°, while in Australia it reaches only as far south as latitude 30°, thus shewing that, on the whole, Australia has a more temperate climate when compared latitude for latitude with places in the Southern Hemisphere.

The comparison is even more favourable when the Northern Hemisphere is included in the comparison, for in the United States the 70° isotherm extends in several of the western States as far north as latitude 41°. In Europe the same isotherm reaches almost to the southern shores of Spain, passing, however, afterwards along the northern shores of Africa till it reaches the Red Sea, when it bends northward along the eastern shore of the Mediterranean till it reaches Syria. In Asia nearly the whole of the land area south of latitude 40° N. has a higher isothermal value than 70°.

The extreme range of shade temperatures in summer and winter in a very large part of Australia amounts to probably only 81°. In Siberia, in Asia, the similar range is no less than 171°, and in North America 153°, or approximately double the Australian range.

Along the northern shores of the Australian continent the temperatures are very equable. At Darwin, for example, the difference in the means for the hottest and coldest months is only 8.5°, and the extreme readings for the year, that is, the highest maximum in the hottest month and the lowest reading in the coldest month, shew a difference of under 50°.

Coming southward the extreme range of temperature increases gradually on the coast, and in a more pronounced way inland.

The detailed temperature results for the several capitals of the States of Australia are shewn in the Climatological Tables hereinafter.

Hottest and Coldest Parts. A comparison of the temperatures recorded at coast and inland stations shews that, in Australia as in other continents, the range increases with increasing distance from the coast.

In the interior of Australia, and during exceptionally dry summers, the temperature occasionally reaches or exceeds 120° in the shade, and during the dry winters the major portion of the country to the south of the tropics is subject to ground frosts. An exact knowledge of temperature disposition cannot be determined until the interior becomes more settled, but from data procurable, it would appear that the hottest area of the continent is situated in the northern part of Western Australia about the Marble Bar and Nullagine goldfields, where the maximum shade temperature during the summer sometimes exceeds 100° for days, and even weeks' continuously. The coldest part of the Commonwealth is the extreme south-east of New South Wales and extreme east of Victoria, namely, the region of the Australian Alps. Here the temperature seldom, if ever, reaches 100° even in the hottest of seasons.

In Tasmania also, although occasionally hot winds may cross the Straits and cause the temperature to rise to 100° in the low-lying parts, yet the island as a whole enjoys a most moderate and equable range of temperature throughout the year.

Monthly Maximum and Minimum Temperatures. The mean monthly maximum and minimum temperatures can be best shewn by means of graphs, which exhibit the nature of the fluctuation of each for the entire year. In the diagram (on page 71) for nine representative places in Australia, the upper heavy curves shew the mean maximum, the lower heavy curves the mean minimum temperatures based upon daily observations. On the same diagram the thin curves shew the relative humidities (see next paragraph).

6. Relative Humidity.—Next after temperature the degree of humidity may be regarded as of great importance as an element of climate; and the characteristic differences of relative humidity between the various capitals of Australia call for special remark. For six representative places the variations of humidity are shewn on the graph on page 71, which gives results based upon daily observations of the dry and wet bulb thermometers. Hitherto difficulties have been experienced in many parts of Australia in obtaining satisfactory observations for a continuous period of any length. For this reason it has been thought expedient to refer to the record of humidity at first order stations only, where the results are thoroughly reliable. Throughout, the degree of humidity given will be what is known as *relative humidity*, that is, the percentage of aqueous vapour actually existing to the total possible if the atmosphere were saturated.

The detailed humidity results for the several State capitals are given in the Climatological Tables hereinafter. From these, it is seen that, in respect of relative humidity, Sydney has the first place, while Melbourne, Hobart, Brisbane, Perth, and Adelaide follow in the order stated, Adelaide being the driest. The graphs on page 71 shew the annual variations in humidity. It will be observed that the *relative humidity* is ordinarily but not invariably great when the temperature is low.

7. Evaporation.—The rate and quantity of evaporation in any territory is influenced by the prevailing temperature, and by atmospheric humidity, pressure and movement. In Australia the question is of perhaps more than ordinary importance: since in its drier regions water has often to be conserved in "tanks"¹ and dams. The magnitude of the economic loss by evaporation will be appreciated from the records on pages 72 and 80 to 85, which show that the yearly amount varies from about $32\frac{1}{2}$ inches at Hobart to 97 inches at Alice Springs in the centre of the Continent.

(i.) *Monthly Evaporation Curves.* The curves showing the mean monthly evaporation in various parts of the Commonwealth will disclose how characteristically different are the amounts for the several months in different localities. The evaporation for characteristic places is shewn on diagram shewing also rainfalls (see page 72).

1. In Australia artificial storage ponds or reservoirs are called "tanks."

(ii.) *Loss by Evaporation.* In the interior of Australia the possible evaporation is often greater than the actual rainfall. Since, therefore, the loss by evaporation depends largely on the exposed area, tanks and dams so designed that the surface shall be a minimum are advantageous. Similarly, the more protected from the direct rays of the sun and from winds, by means of suitable tree planting, the less will be the loss by evaporation: these matters are of more than ordinary concern in the drier districts of Australia.

8. **Rainfall.**—As even a casual reference to climatological maps, indicating the distribution of rainfall and prevailing direction of wind, would clearly shew, the rainfall of any region is determined mainly by the direction and route of the prevailing winds, by the varying temperatures of the earth's surface over which they blow, and by the physiographical features generally.

Australia lies within the zone of the south-east and westerly trade winds. The southern limit of the south-east trade strikes the eastern shores at about 30° south latitude. Hence, we find that, with very few exceptions, the heaviest rains of the Australian continent are precipitated along the Pacific slopes to the north of that latitude, the varying quantities being more or less regulated by the differences in elevation of the shores and of the chain of mountains, upon which the rain-laden winds blow, from the New South Wales northern border to Thursday Island. The converse effect is exemplified on the north-west coast of Western Australia from the summer south-east trade winds. Here the prevailing winds, blowing from the interior of the continent instead of from the ocean, result in the lightest coastal rain in Australia.

The westerly trade winds, which skirt the southern shores, are responsible for the very reliable, although generally light, rains enjoyed by the south-western portion of Western Australia, by the south-eastern agricultural areas of South Australia, by a great part of Victoria, and by the whole of Tasmania.

(i.) *Factors determining Distribution and Intensity of Rainfall.*

(ii.) *Time of Rainfall.*

In preceding Year Books (see No. 6 pp. 72, 73, 74) some notes were given of the various factors governing the distribution, intensity and period of Australian rainfall.

(iii.) *Wettest and Driest Regions.* The wettest known part of Australia is on the north-east coast of Queensland, between Port Douglas and Cardwell, where three stations situated on, or adjacent to, the Johnstone and Russell Rivers have an average annual rainfall of between 150 and 166 inches. The maximum and minimum falls there are:—Goondi, 241.53 in 1894 and 76.24 inches in 1902, or a range of 165.29 inches; Innisfail, 211.24 in 1894 and 69.87 inches in 1902, or a range of 141.37 inches; Harvey Creek, 238.45 in 1901 and 80.47 inches in 1902, or a range of 157.98 inches.

On three occasions more than 200 inches have been recorded at Goondi, the last of these being in 1910, when 204.82 inches were registered. The record at this station covers a period of 20 years.

Harvey Creek in the shorter period of 16 years has twice exceeded 200 inches, the total for 1910 being 201.28 inches.

The driest known part of the continent is about the Lake Eyre district in South Australia (the only part of the continent below sea level), where the annual average is but 5 inches, and where it rarely exceeds 10 inches for the twelve months.

The inland districts of Western Australia have until recent years been regarded as the driest part of Australia, but authentic observations taken during the past decade at settled districts in the east of that State shew that the annual average is from 10 to 12 inches.

(iv.) *Quantities and Distribution of Rainfall generally.* The departure from the normal rainfall increases greatly and progressively from the southern to the northern shores of the continent, and similarly also at all parts of the continent, subject to

capricious monsoonal rains, as the comparisons hereunder will shew. The general distribution is best seen from the map on page 77, shewing the areas subject to average annual rainfalls lying between certain limits. The areas enjoying varying quantities of rainfall determined from the latest available information are shewn in the following table:—

DISTRIBUTION OF AVERAGE RAINFALL.

Average Annual Rainfall.	N.S.W.	Victoria.	Queensland.	South Aust.	Northern Territory	Western Aust.	Tasmania.	Commonwealth.
	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.	sqr. mls.
Under 10 inches	44,997	nil	62,805	317,600	138,190	513,653	nil	1,077,245
10—15 "	77,268	19,912	97,722	33,405	141,570	232,815	nil	602,692
15—20 "	57,639	12,626	116,790	14,190	62,920	89,922	937	355,024
20—30 "	77,202	29,317	218,528	13,827	93,470	95,404	7,559	535,307
30—40 "	30,700	14,029	80,556	984	40,690	40,750	4,588	212,297
Over 40 "	22,566	12,000	94,099	64	46,780	3,376	10,101	188,986
Total area ...	310,372	87,884	670,500	380,070	523,620	975,920	26,215	2,974,581

* Over 3030 sqr. miles no records available.

Referring first to the capital cities, the complete records of which are given on the following page, it is seen that Sydney with a normal rainfall of 48.27 inches occupies the chief place, Brisbane, Perth, Melbourne, Hobart and Adelaide following in that order, Adelaide with 21.04 inches being the driest. The extreme range from the wettest to the driest year is greatest at Brisbane (72.09 inches) and least at Adelaide (17.44 inches).

In order to shew how the rainfall is distributed throughout the year in various parts of the continent, the figures of representative towns have been selected. (See map on page 78). Darwin, typical of the Northern Territory, shews that in that region nearly the whole of the rainfall occurs in the summer months, while little or nothing falls in the middle of the year. The figures of Perth, as representing the south-western part of the continent, are the reverse, for while the summer months are dry, the winter ones are very wet. In Melbourne and Hobart the rain is fairly well distributed throughout the twelve months, with a maximum in October in the former, and in November in the latter. The records at Alice Springs and Daly Waters indicate that in the central parts of Australia the wettest months are in the summer and autumn. In Queensland, as in the Northern Territory, the heaviest rains fall in the summer months, but good averages are also maintained during the other seasons.

On the coast of New South Wales, the first six months of the year are the wettest, with slight excesses in April and July; the averages during the last six months are fair and moderately uniform. In general it may be said that one-fourth of the area of the continent, principally in the eastern and northern parts, enjoys an annual average rainfall of from 20 to 50 inches, the remaining three-fourths receiving generally from 10 to 15 inches.

(v.) *Curves of Rainfall and Evaporation.* The relative amounts of rainfall and evaporation at different times through the year are best seen by referring to the graphs for a number of characteristic places. (See page 72). It will be recognised at once how large is the evaporation when water is fully exposed to the direct rays of the sun, and to wind, etc.

(vi.) *Tables of Rainfall.* The table of rainfall for a long period of years for each of the various Australian capitals affords information as to the variability of the fall in successive years, and the list of the more remarkable falls furnishes information as to what may be expected on particular occasions.

RAINFALL AT THE AUSTRALIAN CAPITALS, 1840 to 1912.

Year.	PERTH.			ADELAIDE.			BRISBANE.			SYDNEY.			MELBOURNE.			HOBART.		
	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.	Amount.	No. of Days.	10 Years' Means.
	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.	in.		in.
1840	...	...	...	24.23	99	...	29.32	...	...	58.52	150	...	22.57	...	...	...	...	...
1	...	...	...	17.96	99	...	49.31	...	...	76.31	142	...	30.18	...	...	13.95	...	...
2	...	...	...	20.32	122	...	28.81	...	...	48.32	137	...	31.16	...	...	23.60	...	...
3	...	...	...	17.19	104	...	51.67	...	...	62.78	168	...	21.54	...	...	13.43	...	...
4	...	...	...	16.88	136	...	63.20	...	...	70.66	157	...	30.74	...	...	26.25	...	...
5	...	...	...	18.83	125	...	39.09	...	...	62.01	132	...	23.93	...	...	16.68	...	...
6	...	...	...	26.89	114	...	31.41	...	41.83	43.83	139	...	30.53	...	...	21.96	...	...
7	...	...	...	27.61	109	...	...	...	(7 yr.)	42.81	142	...	30.18	...	...	14.46	...	...
8	...	...	...	19.74	114	21.07	42.59	...	...	59.17	137	58.27	33.15	...	28.22	33.62	...	19.24
9	...	...	...	25.44	110	(9 yr.)	...	...	...	21.49	140	(9 yr.)	44.25	...	(9 yr.)	33.52	...	(8 yr.)
1850	...	...	...	19.56	84	...	...	...	...	44.88	157	...	26.98	...	...	14.51	...	...
1	...	...	...	30.86	128	...	...	...	...	35.18	142	...	...	...	...	17.98	...	...
2	...	...	...	27.44	118	...	...	...	...	43.79	145	...	...	...	...	23.62	...	...
3	...	...	...	27.08	128	...	...	...	...	46.12	130	...	...	...	...	14.52	...	...
4	...	...	...	15.35	105	...	...	...	...	29.29	136	...	...	...	...	30.54	...	...
5	...	...	...	23.15	124	...	...	...	...	52.86	138	...	28.21	...	...	18.25	...	...
6	...	...	...	24.93	118	...	...	...	...	43.31	116	...	29.76	134	...	22.73	151	...
7	...	...	...	22.15	105	...	...	...	...	50.96	135	...	28.90	138	...	17.14	113	...
8	...	...	...	21.55	107	23.75	43.00	...	...	39.59	139	40.75	26.01	158	...	33.07	129	22.59
9	...	...	...	14.85	95	...	35.00	...	...	42.01	137	...	21.82	156	...	23.31	...	...
1860	...	...	...	19.67	119	...	54.63	144	...	82.76	180	...	25.38	133	...	21.05	...	...
1	...	...	...	24.04	147	...	69.45	155	...	59.86	157	...	29.16	159	...	28.19	...	...
2	...	...	...	21.85	119	...	28.27	98	...	23.99	108	...	22.08	139	...	21.72	...	...
3	...	...	...	23.68	145	...	68.83	146	...	47.08	152	...	36.42	165	...	40.67	...	...
4	...	...	...	19.75	121	...	47.00	114	...	69.12	185	...	27.40	144	...	28.11	...	...
5	...	...	...	15.51	108	...	24.11	52	...	36.15	140	...	15.94	119	...	23.07	...	...
6	...	...	...	20.11	116	...	51.18	142	...	36.90	156	...	22.41	107	...	23.55	...	...
7	...	...	...	19.05	112	...	61.04	112	...	59.66	140	...	25.79	133	...	22.27	...	...
8	...	...	...	19.99	113	19.85	35.98	110	47.55	42.98	161	49.99	18.27	120	24.47	18.08	...	25.00
9	...	...	...	14.74	117	...	59.39	114	...	48.00	150	...	24.58	129	...	23.87	...	...
1870	...	...	...	23.84	119	...	74.06	154	...	64.47	179	...	33.77	129	...	27.53	...	...
1	...	...	...	23.25	137	...	45.45	119	...	52.27	141	...	30.17	125	...	18.25	131	...
2	...	...	...	22.66	146	...	49.22	131	...	37.12	151	...	32.52	136	...	31.76	160	...
3	...	...	...	21.00	139	...	62.02	138	...	73.44	176	...	25.61	134	...	23.43	157	...
4	...	...	...	17.23	127	...	38.71	135	...	63.60	173	...	28.10	134	...	24.09	138	...
5	...	...	...	29.21	157	...	67.03	162	...	46.25	153	...	32.87	158	...	29.25	181	...
6	28.73	100	...	13.43	110	...	53.42	130	...	45.69	156	...	24.04	134	...	23.63	...	...
7	20.48	103	...	24.95	135	...	30.28	119	...	59.66	147	...	24.10	124	...	20.82	...	...
8	39.72	143	29.64	22.48	112	21.24	56.33	134	53.53	49.77	129	54.03	25.36	116	28.11	29.76	...	25.24
9	41.34	106	(3 yr)	20.69	130	...	67.30	157	...	63.19	167	...	19.28	127	...	21.07	...	...
1880	31.79	116	...	22.68	142	...	49.12	134	...	29.51	142	...	28.48	147	...	...	...	...
1	24.78	101	...	18.02	135	...	29.39	117	...	41.09	163	...	24.08	134	...	...	...	...
2	35.68	109	...	15.70	134	...	42.62	121	...	42.28	112	...	22.40	131	...	30.69	...	...
3	39.65	122	...	26.76	161	...	32.22	114	...	46.92	157	...	23.71	130	...	24.05	160	...
4	31.96	92	...	18.74	138	...	43.49	136	...	44.04	159	...	25.85	128	...	21.55	171	...
5	33.44	110	...	15.89	133	...	26.85	112	...	39.91	145	...	26.94	123	...	28.29	176	...
6	28.90	89	...	14.42	141	...	53.66	152	...	39.43	152	...	24.00	128	...	21.39	189	...
7	37.52	105	...	25.70	164	...	81.54	242	...	60.16	190	...	32.39	153	...	24.21	174	...
8	27.83	117	33.29	14.55	131	19.30	33.08	143	45.93	23.01	132	42.95	19.42	123	24.66	18.45	151	23.71
9	39.96	123	...	30.87	143	...	49.36	155	...	57.16	186	...	27.14	125	...	30.80	180	(8 yr.)
1890	46.73	126	...	25.78	139	...	73.02	162	...	81.42	184	...	24.24	140	...	27.51	173	...
1	30.33	93	...	14.01	113	...	41.68	143	...	55.30	200	...	26.73	126	...	23.25	160	...
2	31.23	122	...	21.53	137	...	64.98	146	...	69.26	189	...	24.96	124	...	18.62	...	...
3	40.12	145	...	21.49	129	...	88.26	147	...	49.90	209	...	26.80	140	...	27.46	146	...
4	23.72	103	...	20.78	134	...	44.02	143	...	38.32	188	...	22.60	138	...	27.39	151	...
5	33.01	123	...	21.28	130	...	59.11	105	...	31.86	170	...	17.04	131	...	25.40	119	...
6	31.60	103	...	15.17	121	...	44.97	121	...	42.40	157	...	25.16	124	...	21.61	136	...
7	27.17	106	...	15.42	119	...	42.63	115	...	42.52	136	...	25.85	117	...	20.45	153	...
8	31.76	118	35.55	20.75	116	20.71	60.06	131	56.80	43.17	143	51.12	15.61	102	23.61	20.40	164	24.29
9	32.40	107	...	18.84	119	...	38.85	141	...	55.90	174	...	28.87	116	...	20.68	170	...
1900	36.61	124	...	21.68	133	...	34.41	110	...	66.54	170	...	25.09	139	...	19.14	135	...
1	36.75	122	...	18.01	124	...	38.48	110	...	40.10	149	...	27.45	113	...	25.11	147	...
2	27.06	93	...	16.02	123	...	16.17	87	...	43.07	180	...	23.08	102	...	21.85	151	...
3	35.69	140	...	25.47	134	...	49.27	136	...	38.62	173	...	28.43	130	...	25.86	139	...
4	34.35	125	...	20.31	117	...	33.23	124	...	45.93	158	...	29.72	138	...	22.41	139	...
5	34.61	116	...	22.28	131	...	36.76	108	...	35.03	145	...	25.64	129	...	32.09	168	...
6	32.37	121	...	26.51	127	...	42.85	125	...	31.89	160	...	22.29	114	...	23.31	155	...
7	40.12	132	...	17.78	125	...	31.46	119	...	31.32	132	...	22.26	102	...	25.92	167	...
8	30.52	106	34.05	24.56	125	21.15	44.01	125	36.55	45.65	157	43.41	17.72	130	25.36	16.50	149	23.29
9	39.11	107	...	27.69	138	...	34.06	111	...	32.45	177	...	25.86	171	...	27.29	170	...
1910	37.02	135	...	24.62	116	...	49.00	133	...	46.91	160	...	24.61	167	...	25.22	205	...
1	23.38	108	...	15.99	127	...	35.15	128	...	50.24	155	...	36.61	168	...	26.78	193	...
2	27.85	123	...	19.57	116	...	41.32	114	...	47.51	172	...	20.37	157	...	23.14	181	...
Aver.	...	...	33.11	...	...	21.04	...	...	46.70	...	...	48.27	...	...	26.20	...	...	23.57
No. of Yrs.	...	...	(37)	...	...	(74)	...	...	(63)	...	...	(73)	...	...	(69)	...	...	...

NOTE.—The above average Rainfall figures for Brisbane, Sydney, and Melbourne differ slightly from the mean annual falls given in the Climatological Tables on pp. 80-85, which are for a lesser number of years.

9. **Remarkable Falls of Rain.**—The following are the more remarkable falls of rain in the States of New South Wales, Queensland, Western Australia, and South Australia, which have occurred within a period of twenty-four hours:—

HEAVY RAINFALLS, NEW SOUTH WALES, UP TO 1912 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anthony ...	28 Mar., 1887	17.14	Kembla Heights ...	13 Jan., 1911	17.46
" ...	15 Jan., 1890	13.13	Leconfield ...	9 Mar., 1893	14.53
Araluen ...	15 Feb., 1898	13.36	Madden's Creek ...	13 Jan., 1911	18.68
Berry ...	13 Jan., 1911	12.05	Maitland W. ...	9 Mar., 1893	14.79
Billambil ...	14 Mar., 1894	12.94	Major's Creek ...	14 Feb., 1898	12.32
Bomaderry ...	13 Jan., 1911	13.03	Morpeth ...	9 Mar., 1893	21.52
Broger's Creek	14 Feb., 1898	20.05	Mount Kembla ...	13 Jan., 1911	18.25
" "	19 July, 1910	12.22	Nepean Tunnel ...	14 Feb., 1898	12.30
" "	13 Jan., 1911	20.83	Nowra ...	13 Jan., 1911	13.00
Bulli Mountain	13 Feb., 1898	17.14	Prospect ...	28 May, 1889	12.37
Camden Haven	22 Jan., 1895	12.23	Richmond ...	28 " "	12.18
Castle Hill...	28 May, 1889	13.49	Rooty Hill ...	27 " "	11.85
Colombo Lyttleton	5 Mar., 1893	12.17	Taree ...	28 Feb., 1892	12.24
Condong ...	27 " 1887	18.66	Terara ...	26 " 1873	12.57
Cordeaux River	14 Feb., 1898	22.58	Tomago ...	9 Mar., 1893	13.76
" "	13 Jan., 1911	14.52	Tongarra Farm ...	14 Feb., 1898	15.12
Dapto West ...	14 Feb., 1898	12.05	Towamba ...	5 Mar., 1893	20.00
Dunheved ...	28 May, 1889	12.40	South Head		
Holy Flat ...	12 Mar., 1887	12.00	(near Sydney) ...	29 Apr., 1841	20.12
" " ...	28 Feb., 1892	12.24	" "	16 Oct., 1844	20.41

HEAVY RAINFALLS, QUEENSLAND, UP TO 1912 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Anglesey ...	26 Dec., 1909	18.20	Crohamhurst		
Ayr ...	20 Sep., 1890	14.58	(Blackall Range)	2 Feb., 1893	35.71
Bloomsbury ...	14 Feb., 1893	17.40	" "	9 June, " "	13.31
" "	10 Jan., 1901	16.62	" "	9 Jan., 1898	19.55
Bowen ...	13 Feb., 1893	14.65	" "	6 Mar. " "	16.01
Brisbane ...	21 Jan., 1887	18.31	" "	26 Dec., 1909	13.85
Bromby Park (Bowen)	14 Feb., 1893	13.28	Croydon ...	29 Jan., 1908	15.00
Brookfield ...	14 Mar., 1908	14.95	Cryna (Beaudesert)...	21 " 1887	14.00
Buderim Mountain	11 Jan., 1898	26.20	Donaldson		
Burketown ...	15 " 1891	13.58	(now Granada)	8 " 1911	13.50
" "	12 Mar., 1903	14.52	" "	9 " "	14.30
Cairns ...	11 Feb., 1889	14.74	Dungeness ...	16 Mar., 1893	22.17
" "	21 Apr., " "	12.40	" "	17 Apr., 1894	14.00
" "	5 " 1891	14.08	Dunira ...	9 Jan., 1898	18.45
" "	11 Feb., 1911	15.17	" "	6 Mar., " "	15.95
" "	2 Apr., " "	20.16	Enoggera Railway ...	14 " 1908	12.14
Cape Grafton	5 Mar., 1896	13.37	Ernest Junction ...	" "	13.00
Cardwell ...	30 Dec., 1889	12.00	Flat Top Island ...	22 Dec., 1909	12.96
" "	23 Mar., 1890	12.00	Floraville ...	11 Mar., 1903	12.86
" "	18 " 1904	18.24	Flying Fish Point ...	7 Apr., 1912	16.06
" "	3 Apr., 1911	12.84	Geraldton		
Clare ...	26 Jan., 1896	15.30	(now Innis) ...	11 Feb., 1889	17.13
Collaroy ...	30 " 1896	14.25	" "	1 Dec., " "	12.45
Cooktown ...	22 " 1903	12.49	" "	6 Apr., 1894	16.02
Cooran ...	1 Feb., 1893	13.62	" "	18 " 1899	13.20
" "	26 Dec., 1908	14.08	" "	24 Jan., 1900	15.22
Cooroy ...	9 June, 1893	13.60	" "	29 Dec., 1903	21.22
" "	10 Jan., 1893	13.50	" "	11 Feb., 1911	14.48

HEAVY RAINFALLS, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Geraldton			Kuranda ...	6 Mar., 1899	14.12
(now Innisfail)	1 Apr., 1911	12.85	" ...	20 Apr., 1903	14.16
" "	2 " "	15.00	" ...	14 Jan., 1909	12.37
" "	7 " 1912	20.50	" ...	11 Feb., 1911	16.30
" "	8 " "	12.15	" ...	17 Mar., "	15.10
Gin Gin ...	16 Jan., 1905	13.61	" ...	31 " "	18.60
Gladstone ...	18 Feb., 1888	12.37	" ...	1 Apr., "	24.30
" ...	31 Jan., 1893	14.62	" ...	2 " "	28.80
" ...	4 Feb., 1911	18.83	Landsborough	2 Feb., 1893	15.15
Glen Broughton ...	5 Apr., 1894	18.50	" ...	9 June, "	12.80
Glen Prairie	18 " 1904	12.18	" ...	26 Dec., 1909	14.00
Gold Creek Reservoir	14 Mar., 1908	12.50	Low Island	10 Mar., 1904	15.07
Goondi Mill (Gerald'n)	6 Apr., 1894	15.69	" ...	31 " 1911	14.70
" "	18 Apr., 1899	14.78	" ...	1 Apr., "	23.43
" "	24 Jan., 1900	13.80	Lucinda ...	17 Feb., 1906	13.35
" "	29 Dec., 1903	17.83	" ...	10 Mar., 1906	14.60
" "	10 Feb., 1911	17.68	Lytton ...	21 Jan., 1887	12.85
" "	31 Mar., "	12.38	Mackay ...	23 Dec., 1909	13.96
" "	1 Apr., "	13.60	Sugar Experimental		
" "	6 Apr., 1912	15.55	Farm, Mackay ...	" "	12.00
Halifax ...	5 Feb., 1899	15.37	Macnade Mill		
" ...	6 Jan., 1901	15.68	(Townsville) ...	18 Jan., 1894	12.56
" "	8 Apr., 1912	12.75	" ...	17 Apr., "	14.26
Hambledon Mill	13 Jan., 1909	13.80	" ...	5 Feb., 1899	15.20
" "	2 " 1911	18.61	" ...	6 Jan., 1901	23.33
" "	10 Feb., "	13.97	Maleny ...	26 Dec., 1909	14.76
" "	30 Mar., "	13.04	Mapleton ...	14 Mar., 1908	14.29
" "	31 " "	14.95	" ...	26 Dec., 1909	15.72
" "	1 Apr., "	19.62	Marlborough	17 " 1888	14.24
Harvey Creek	8 Mar., 1899	17.72	Milton ...	14 Mar., 1908	12.24
" "	25 Jan., 1900	12.53	Mirani ...	12 Jan., 1901	16.59
" "	25 May, 1901	14.00	Molloy ...	31 Mar., 1911	20.02
" "	14 Mar., 1903	12.10	" ...	1 Apr., "	20.00
" "	11 Jan., 1905	16.96	" ...	2 " "	20.00
" "	28 " 1906	12.29	Mooloolah...	13 Mar., 1892	21.53
" "	14 Jan., 1909	14.40	" ...	2 Feb., 1893	19.11
" "	3 Jan., 1911	27.75	" ...	6 Mar., 1898	14.43
" "	11 Feb., "	12.88	Mount Crosby	14 Mar., 1908	14.00
" "	1 Apr., "	13.61	Mount Cuthbert	8 Jan., 1911	18.00
" "	2 " "	16.46	Mourilyan	14 Jan., 1909	13.00
Haughton Valley	26 Jan., 1896	18.10	" ...	3 " 1911	12.70
Hillcrest (Mooloolah)	26 Dec., 1909	13.35	" ...	11 Feb., "	17.40
Holmwood (Woodf'd)	2 Feb., 1893	16.19	" ...	1 Apr., "	13.20
" "	10 Jan., 1898	12.40	" ...	7 " 1912	18.97
Homebush	3 Feb., "	12.04	Mundoolun	21 Jan., 1887	17.95
Howard ...	15 Jan., 1905	19.55	Musgrave ...	6 Apr., 1894	13.71
Ingham ...	18 " 1894	12.60	Nambour ...	9 Jan., 1898	21.00
" ...	6 " 1901	13.59	" ...	7 Mar., "	13.28
" ...	25 Dec., 1903	12.30	" ...	27 Dec., 1909	16.80
Inkerman ...	21 Sep., 1890	12.93	Nerang ...	15 June 1892	12.35
Inneshowen			North Pine	16 Feb., 1893	14.97
(Johnstone River)	30 Dec., 1889	14.01	Nundah ...	14 Mar., 1908	12.00
Isis Junction	6 Mar., 1898	13.60	Oxenford ...	14 Mar., 1908	15.65
Kamerunga (Cairns)	20 Jan., 1892	13.61	Palmwoods	4 Feb., 1893	12.30
" "	6 Apr., 1894	14.04	" ...	10 Jan., 1898	15.85
" "	5 " 1895	12.31	" ...	7 Mar., "	13.02
" "	11 Feb., 1911	13.07	" ...	25 Dec., 1909	17.75
" "	1 Apr., "	14.20	Peachester	26 " "	14.91
" "	2 " "	21.00	Pittsworth	11 Mar., 1890	14.68

HEAVY RAINFALL, QUEENSLAND—Continued.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Port Douglas ...	5 Mar., 1887	13.00	Victoria Mill ...	6 Jan., 1901	16.67
" " ...	10 " 1904	16.34	Walsh River ...	1 Apr., 1911	13.70
" " ...	11 Jan., 1905	14.68	Woodford ...	2 Feb., 1893	14.93
" " ...	17 Mar., 1911	16.10	Woodlands (Yeppoon) ...	25 Mar., 1890	14.25
" " ...	1 Apr., "	31.53	" " ...	31 Jan., 1893	23.07
Ravenswood ...	24 Mar., 1890	17.00	" " ...	9 Feb., 1896	13.97
Redcliffe ...	21 Jan., 1887	14.00	" " ...	7 Jan., 1898	14.50
" " ...	16 Feb., 1893	17.35	Woombye ...	26 Dec., 1909	13.42
Rosedale ...	6 Mar., 1898	12.60	Yandina ...	1 Feb., 1893	20.08
Sandgate ...	16 Feb., 1893	14.03	" " ...	9 June, "	12.70
Somerset ...	28 Jan., 1903	12.02	" " ...	9 Jan., 1898	19.25
St. Helens (Mackay) ...	24 Feb., 1888	12.00	" " ...	7 Mar., "	13.52
St. Lawrence ...	17 Feb., 1888	12.10	" " ...	28 Dec., 1909	15.80
" " ...	30 Jan., 1896	15.00	Yarrabah ...	11 Feb., 1911	12.00
Tewantin ...	30 Mar., 1904	12.30	" " ...	2 Apr., "	30.65
The Hollow (Mackay) ...	23 Feb., 1888	15.12	Yeppoon ...	31 Jan., 1893	20.05
Thornborough ...	20 Apr., 1903	18.07	" " ...	8 " 1893	18.05
Townsville ...	24 Jan., 1892	19.20	" " ...	3 Feb., 1906	14.90
" " ...	28 Dec., 1903	15.00	" " ...	" 1911	14.92

HEAVY RAINFALLS, SOUTH AUSTRALIA, UP TO 1912 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Borroloola ...	14 Mar., 1899	14.00	Pine Creek ...	8 Jan., 1897	10.35
Lake Nash ...	21 " 1901	10.25	Port Darwin ...	7 Jan., 1897	11.67

HEAVY RAINFALLS, WESTERN AUSTRALIA, UP TO 1912 INCLUSIVE.

Name of Town or Locality.	Date.	Amnt.	Name of Town or Locality.	Date.	Amnt.
		ins.			ins.
Balla Balla ...	21 Mar., 1899	14.40	Whim Creek ...	2 Apr., 1898	7.08
Boodarie ...	21 " "	14.53	" " ...	3 " "	29.41
Cossack ...	3 Apr., 1898	12.82	" " ...	20 Mar., 1899	8.89
" " ...	16 " 1900	13.23	" " ...	21 " "	18.17
Croydon ...	3 Mar., 1903	12.00	Woodstock ...	21 " 1912	13.00
Cocos Island ...	29 Nov., "	14.98	Wyndham ...	27 Jan., 1890	11.60
Derby ...	29 Dec., 1898	13.09	" " ...	11 " 1903	9.98
" " ...	30 " "	7.14	" " ...	12 " "	6.64
Fortescue ...	3 May, 1890	23.36	" " ...	13 " "	4.20
Kerdiadary ...	7 Feb., 1901	12.00	Yeeda ...	28 Dec., 1898	8.42
Obagama ...	28 " 1910	12.00	" " ...	29 " "	6.88
Point Torment ...	17 Dec., 1906	11.86	" " ...	30 " "	6.12
Thangoo ...	17-19 Feb. '96	24.18			

10. **Snowfall.**—Light snow has been known to fall even as far north, occasionally, as latitude 31° S., and from the western to the eastern shores of the continent. During exceptional seasons it has fallen simultaneously over two-thirds of the State of New South Wales, and has extended at times along the whole of the Great Dividing Range, from its southern extremity in Victoria as far north as Toowoomba in Queensland. During the winter snow covers the ground to a great extent on the Australian Alps for several months, where also the temperature falls below zero Fahrenheit during the night, and in the ravines around Kosciusko and similar localities the snow never entirely disappears.

The antarctic "V"-shaped disturbances are always associated with our most pronounced and extensive snowfalls. The depressions on such occasions are very steep in the vertical area, and the apexes are unusually sharp-pointed and protrude into very low latitudes, sometimes even to the tropics.

11. Hail.—Hail falls throughout Australia most frequently along the southern shores of the continent in the winter, and over south-eastern Australia during the summer months. The size of the hailstones generally increases with distance from the coast, a fact which lends strong support to the theory that hail is brought about by ascending currents. Rarely does a summer pass without some station experiencing a fall of stones exceeding in size an ordinary hen-egg, and many riddled sheets of light-gauge galvanised iron bear evidence of the weight and penetrating power of the stones.

Hail storms occur most frequently in Australia when the barometric readings indicate a flat and unstable condition of pressure. They are almost invariably associated with tornadoes or tornadic tendencies, and on the east coast the clouds from which the stones fall are generally of a remarkable sepia-coloured tint.

12. Barometric Pressures.—The mean annual barometric pressure (corrected to sea-level and standard gravity) in Australia varies from 29.80 inches on the north coast to 29.92 inches over the central and 30.03 inches in the southern parts of the continent. In January the mean pressure ranges from 29.70 inches in the northern and central areas to 29.91 inches in the southern. The July mean pressure ranges from 29.90 inches at Darwin to 30.13 at Alice Springs. Barometer readings, corrected to mean sea-level, have, under anticyclonic conditions in the interior of the continent, ranged from 30.81 inches to as low as 28.44 inches. This lowest record was registered at Townsville during a hurricane on the 9th March, 1903. The mean annual fluctuations of barometric pressure for the capitals of Australia are shewn on page 73.

13. Wind.—Notes on the distinctive wind currents in Australia were given in preceding Year Books (see No. 6, page 83) and are here omitted to save space.

14. Cyclones and Storms.—The "elements" in Australia are ordinarily peaceful, and although severe cyclones have visited various parts, more especially coastal areas, such visitations are rare, and may be properly described as erratic.

During the winter months the southern shores of the continent are subject to cyclonic storms, evolved from the V-shaped depressions of the southern low-pressure belt. They are felt most severely over the south-western parts of Western Australia, to the south-east of South Australia, in Bass Straits, including the coast line of Victoria, and on the west coast of Tasmania. Apparently the more violent wind pressures from these cyclones are experienced in their northern half, that is, in that part of them which has a north-westerly to a south-westerly circulation.

Occasionally the north-east coast of Queensland is visited by hurricanes from the north-east tropics. During the first three months of the year these hurricanes appear to have their origin in the neighbourhood of the South Pacific Islands, their path being a parabolic curve of south-westerly direction. Only a small percentage, however, reach Australia, the majority recurving in their path to the east of New Caledonia.

Very severe cyclones, popularly known as "Willy Willies," are peculiar to the north-west coast of Western Australia from the months of December to March inclusive. They apparently originate in the ocean, in the vicinity of Cambridge Gulf, and travel in a south-westerly direction with continually increasing force, displaying their greatest energy near Cossack and Onslow, between latitudes 20° and 22° South. The winds in these storms, like those from the north-east tropics, are very violent and destructive, causing great havoc amongst the pearl-fishers. The greatest velocities are usually to be found in the south-eastern quadrant of the cyclones, with north-east to east winds. After leaving the north-west coast, these storms either travel southwards, following the coast-line, or cross the continent to the Great Australian Bight. When they take the latter course their track is marked by torrential rains, as much as 29.41 inches, for example, being recorded at Whim Creek from one such occurrence. Falls of 10 inches

and over have frequently been recorded in the interior of Western Australia from similar storms.

Some further notes on severe cyclones and on "Southerly Bursters," a characteristic feature of the eastern part of Australia, will be found in previous issues of the Year Book (see No. 6, pp. 84, 85, 86).

15. Influences affecting Australian Climate.—Australian history does not cover a sufficient period, nor is the country sufficiently occupied, to ascertain whether or not the advance of settlement has materially affected the climate as a whole. Local changes therein, however, have taken place, a fact which suggests that settlement and the treatment of the land have a distinct effect on local conditions. For example, the mean temperature of Sydney shews a rise of two-tenths of a degree during the last twenty years, a change probably brought about by the great growth of residential and manufacturing buildings within the city and in the surrounding suburbs during that period. Again, low-lying lands on the north coast of New South Wales, that originally were seldom subject to frosts, have with the denudation of the surrounding hills from forests experienced annual visitations, the probable explanation being that, through the absence of trees, the cold air of the high lands now flows, unchecked and untempered, down the sides of the hills to the valleys and lower lands.

(i.) *Influences of Forests on Climate.* As already indicated, forests doubtless exercise a great influence on local climate, and hence, to the extent that forestal undertakings will allow, the weather can be controlled by human agency. The direct action of forests is an equalising one; thus, especially in equatorial regions and during the warmest portion of the year, they considerably reduce the mean temperature of the air. They also reduce the diurnal extremes of their shade temperatures, by altering the extent of radiating surface, by evaporation, and by checking the movement of air. While decreasing evaporation from the ground, they increase the relative humidity. Vegetation greatly diminishes the rate of flow-off of rain, and the washing away of surface soil. Thus, when a region is protected by trees, steadier water supply is ensured, and the rainfall is better conserved. In regions of snowfall the supply of water to rivers is similarly regulated, and without this and the sheltering influence of ravines and "gullies," watercourses supplied mainly by melting snow would be subject to alternate periods of flooding and dryness. This is borne out in the inland rivers. Thus, the River Murray, which has never been known to run dry, derives its steadiness of flow mainly through the causes above indicated.

(ii.) *Direct Influences of Forest on Rainfall.* Whether forests have a direct influence on rainfall is a debatable question, some authorities alleging that precipitation is undoubtedly induced by forests, while others contend the opposite.

Sufficient evidence exists, however, to establish that, even if the rainfall has not increased, the beneficial effect of forest lands in tempering the effects of the climate is more than sufficient to disclose the importance of their protection and extension.

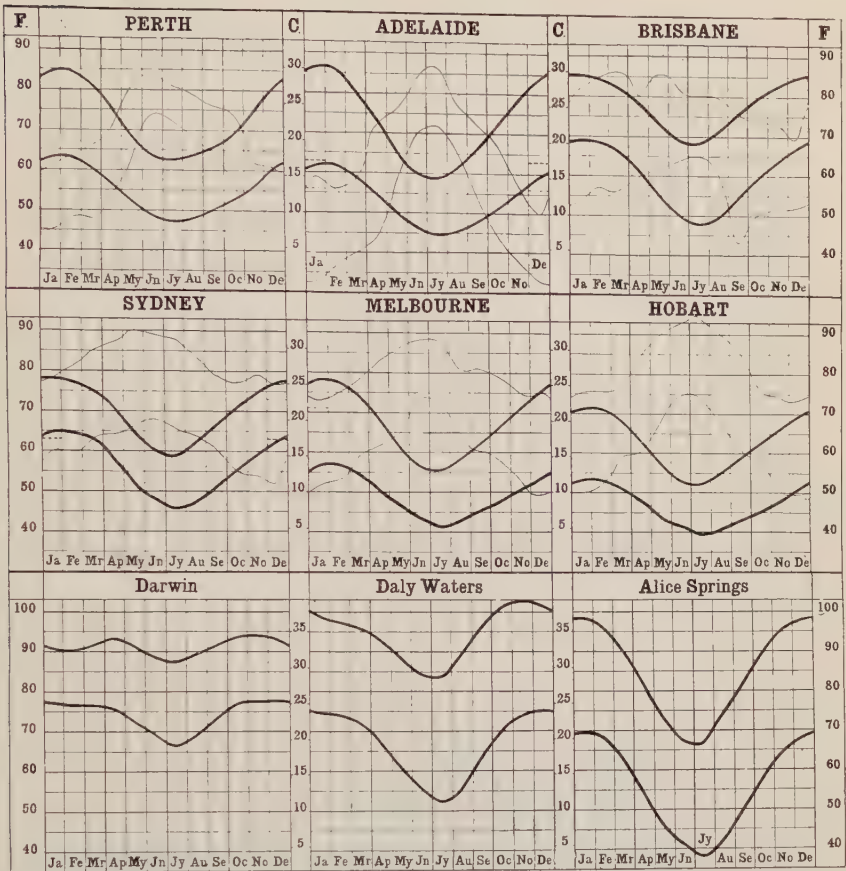
It is the rapid rate of evaporation, induced by both hot and cold winds, which injures crops and makes life uncomfortable on the plains. Whether the forest aids in increasing precipitation there may be doubt, but nobody can say that it does not check the winds and the rapid evaporation due to them.

Trees as wind-breaks have been successfully planted in central parts of the United States, and there is no reason why similar experiments should not be successful in many parts of our treeless interior. The belts should be planted at right angles to the direction of the prevailing parching winds, and if not more than half a mile apart will afford shelter to the enclosed areas.

In previous issues some notes on observations made in other countries were added (see Year Book No. 6, pp. 86 to 95).

16. Comparison of Rainfalls and Temperatures.—For the purpose of comparison the following lists of rainfalls and temperatures are given for various important cities throughout the world, for the site of the federal capital, and for the capitals of the Australian States:—

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN MAXIMUM AND MINIMUM TEMPERATURE AND HUMIDITY IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF TEMPERATURE AND HUMIDITY.—In the above graphs, in which the heavy lines denote 'temperature' and the thin lines 'humidity,' the fluctuations of mean temperature and mean humidity are shewn throughout the year. These curves are plotted from the data given in the Climatological Tables hereinafter. The temperatures are shewn in degrees Fahrenheit, the inner columns giving the corresponding values in Centigrade degrees. Humidities have not been obtained for Darwin, Daly Waters, and Alice Springs.

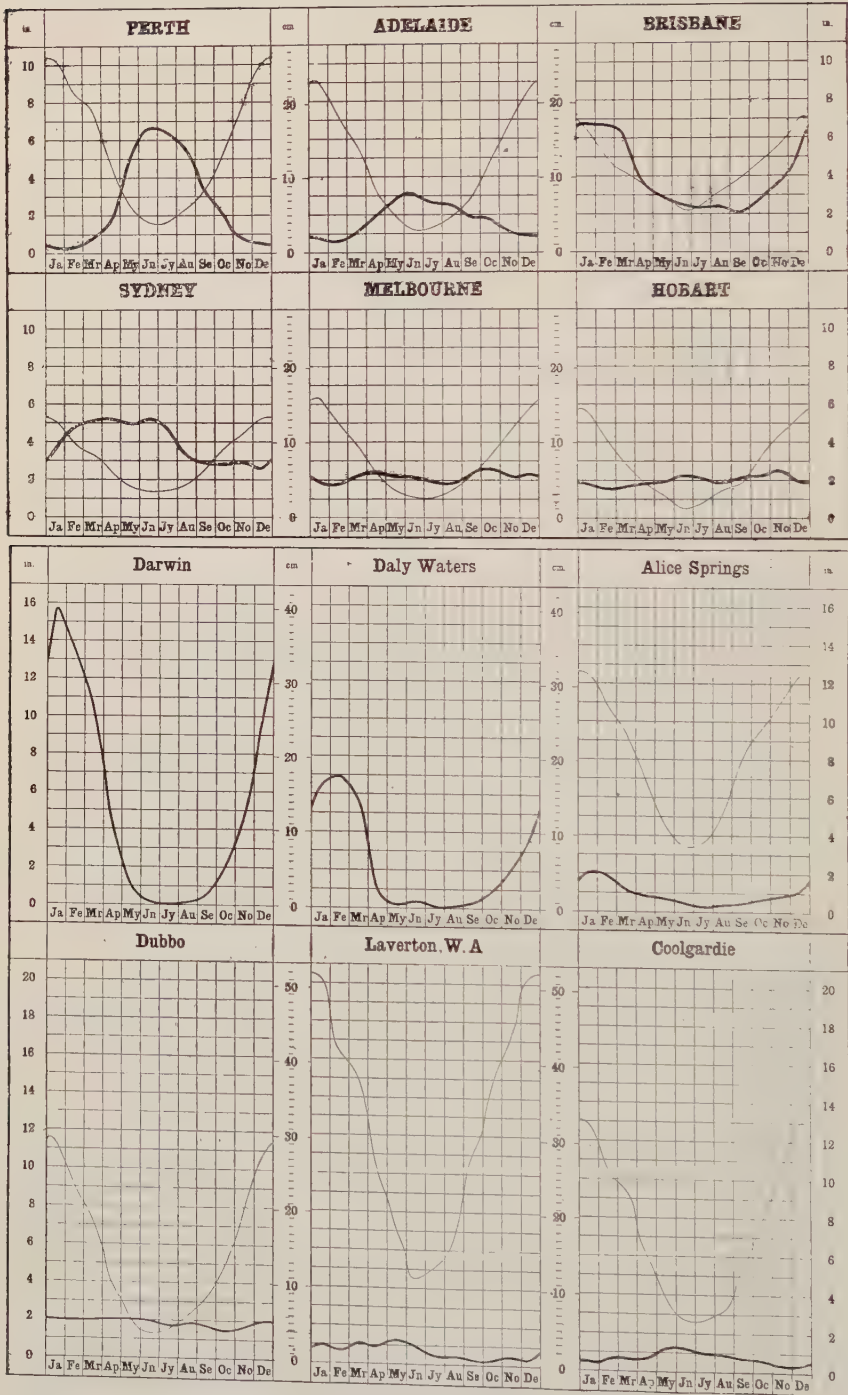
For the thin lines the degree numbers represent relative humidities, or the percentages of actual saturation on the total for the respective temperatures.

The upper temperature line represents the mean of the maximum, and the lower line the mean of the minimum results; thus the curves also shew the progression of the range between maximum and minimum temperatures throughout the year. The humidity curves shew the highest and lowest values of the mean monthly humidity at 9 a.m. recorded during a series of years.

INTERPRETATION OF THE GRAPHS.—The curves denote mean monthly values. Thus, taking for example, the temperature graphs for Perth, the mean readings of the maximum and minimum temperatures for a number of years on 1st January would give respectively about 83° Fahr. and 62° Fahr. Thus the mean range of temperature on that date is the difference, viz., 21°. Similarly, observations about 1st June would give respectively about 66° Fahr. and 51° Fahr., or a range of 15°.

In a similar manner it will be seen that the greatest mean humidity, say for March, is about 66° and the least mean humidity for the month 48°; in other words, at Perth, the degree of saturation of the atmosphere by aqueous vapour for the month of March ranges between 66 % and 48 %.

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN RAINFALL AND MEAN EVAPORATION IN SEVERAL PARTS OF THE COMMONWEALTH OF AUSTRALIA.



(For Explanation see next page.)

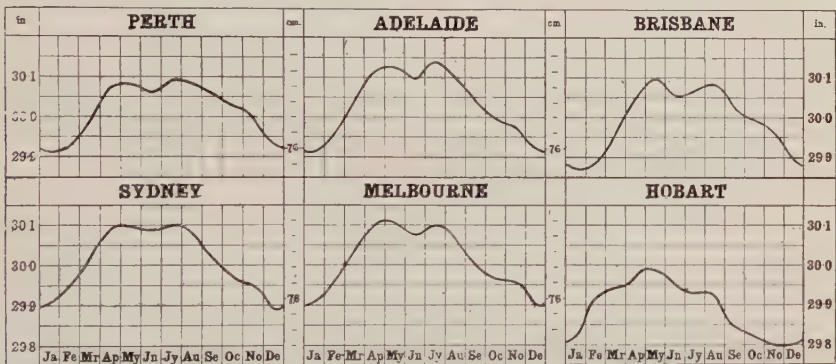
EXPLANATION OF THE GRAPHS OF RAINFALL AND EVAPORATION.—On the preceding graphs thick lines denote rainfall and thin lines evaporation, and shew the fluctuation of the mean rate of fall *per month* throughout the year. The results, plotted from the Climatological Tables hereinafter, are shewn in inches (see the outer columns), and the corresponding metric scale (centimetres) is shewn in the two inner columns. The evaporation is not given for Darwin and Daly Waters.

INTERPRETATION OF THE GRAPHS.—The distance for any date from the zero line to the curve, represents the average number of inches, reckoned as per month, of rainfall at that date. Thus, taking the curves for Adelaide, on the 1st January the rain falls on the average at the rate of about four-fifths of an inch per month, or, say, at the rate of about 9½ inches per year. In the middle of June it falls at the rate of nearly 3 inches per month, or, say, at the rate of about 36 inches per year. At Dubbo the evaporation is at the rate of nearly 11¼ inches per month about the middle of January, and only about 1½ inches at the middle of June.

TABLE SHEWING MEAN ANNUAL RAINFALL AND EVAPORATION IN INCHES OF THE PLACES SHEWN ON PRECEDING PAGE, AND REPRESENTED BY THE GRAPHS.

—	Rainfall.	Evapora- tion.	—	Rainfall.	Evapora- tion.
Perth ...	33.11	66.13	Darwin... ..	61.72	—
Adelaide ...	21.04	54.21	Daly Waters ...	27.95	—
Brisbane ...	46.95	51.19	Alice Springs...	10.93	97.10
Sydney ...	47.99	36.92	Dubbo ...	22.30	66.37
Melbourne ...	25.51	38.38	Laverton, W.A.	9.24	—
Hobart ...	23.57	32.42	Coolgardie ...	9.09	57.74

GRAPHS SHEWING ANNUAL FLUCTUATIONS OF MEAN BAROMETRIC PRESSURE FOR THE CAPITALS OF THE SEVERAL STATES OF THE COMMONWEALTH OF AUSTRALIA.



EXPLANATION OF THE GRAPHS OF BAROMETRIC PRESSURE.—On the above graphs the lines representing the yearly fluctuation of barometric pressure at the State capital cities are means for long periods, and are plotted from the Climatological Tables given hereinafter. The pressures are shewn in inches on about 2½ times the natural scale, and the corresponding pressures in centimetres are also shewn in the two inner columns, in which each division represents one millimetre.

INTERPRETATION OF THE BAROMETRIC GRAPHS.—Taking the Brisbane graph for purposes of illustration, it will be seen that the mean pressure on 1st January is about 29.87 inches, and there are maxima in the middle of May and August of about 30.10 and 30.08 respectively. The double maxima appear clearly on each graph.

Chart indicating the area affected and period of duration of the Longest Heat Waves when the Maximum Temperature for consecutive 24 hours reached or exceeded 90° Fah.

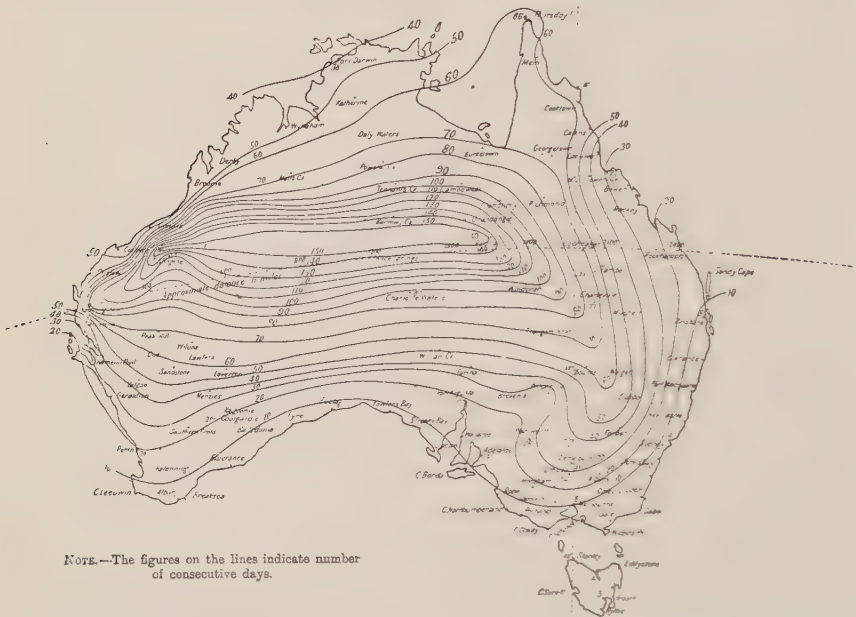
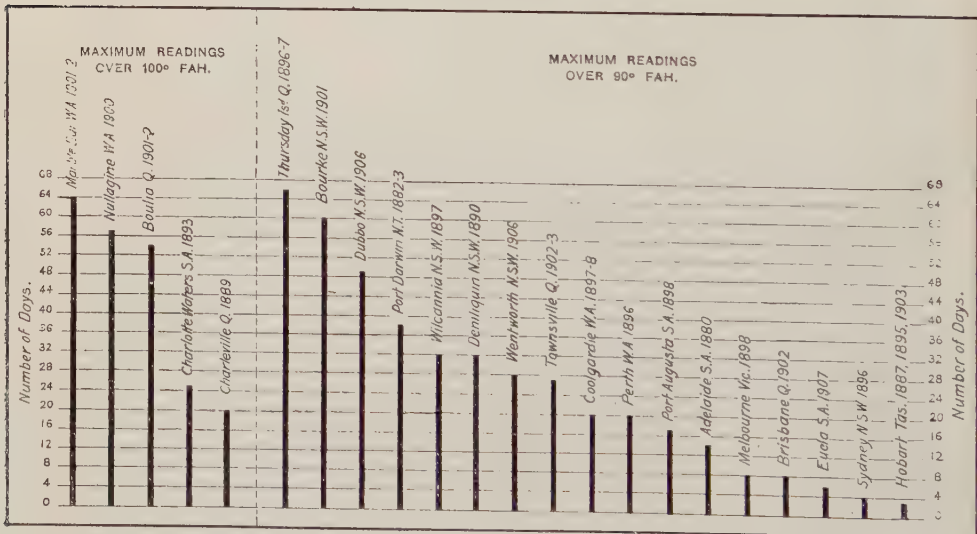


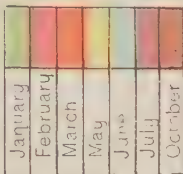
Diagram showing the greatest number of consecutive days on which the Temperature in the shade was over 100° and also over 90° at the places indicated.



METEOROLOGICAL MAP OF AUSTRALIA

WETTEST MONTHS OF YEAR

from data supplied by
H. A. HUNT, Esq.,
C'wealth Meteorologist.



METEOROLOGICAL SUB-DIVISIONS.

- WEST AUSTRALIA.**
No.
1. East Kimberley.
2. West Kimberley.
3. North-West.
4. Gascoyne.
5. South-West.
6. Eucla.
7. Eastern.

- SOUTH AUSTRALIA.**
8. Northern Territory.
9. Far North and N.W.
10. West.

- QUEENSLAND.**
11. Upper North.
12. North-East.
13. Lower North.
14. Central.
15. Murray Valley.
16. South-East.

- NEW SOUTH WALES.**
17. Peninsular.
18. Gulf.
19. Far West.
20. Central.
21. Nth-East Coast.

- WESTERN AUSTRALIA.**
22. Western.
23. North-West Plain.
24. North-West Slope.
25. Northern Tableland
30. North Coast.
31. Hunter & Manning.

WESTERN AUSTRALIA.

26. South West.
27. Western.
28. North-West Plain.
29. North-West Slope.
30. Northern Tableland
31. Hunter & Manning.

- SOUTH AUSTRALIA.**
32. Central Tableland
33a. Metropolitan.
34. Cent. Westn. Slope.
35. Cent. Westn. Plain.
36. Riverina.
37. South-West Slope.
38. Southern Tableland
39. South Coast.

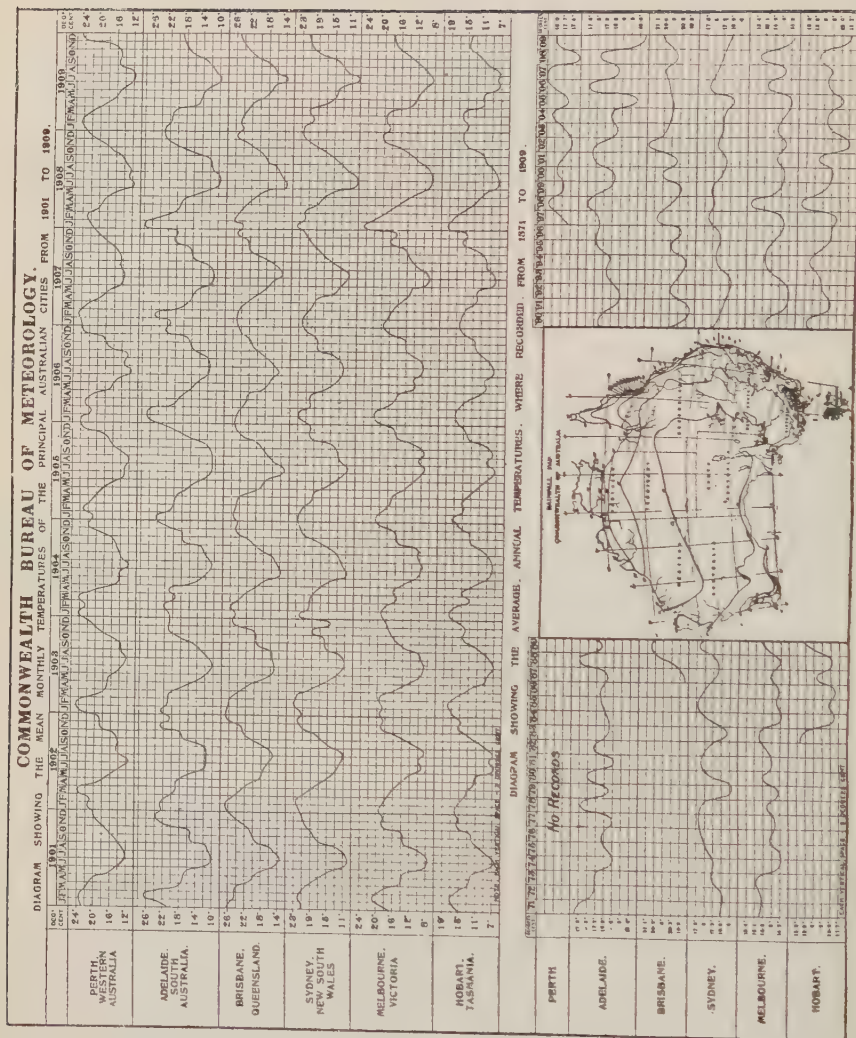
VICTORIA.

40. Gippsland.
41. North-East.
42. Central.

- TASMANIA.**
43. North Central.
44. Northern Country.
45. Mallee.
46. Winemera.
47. Western.

- TASMANIA.**
48. Northern.
49. W. Coast Mt. Region
50. Central Plateau.
51. Midland
52. East Coast.
53. Derwent.
54. South-Eastern.

The above are the meteorological sub-divisions adopted by H. A. HUNT Esq., C'wealth. Meteorologist.



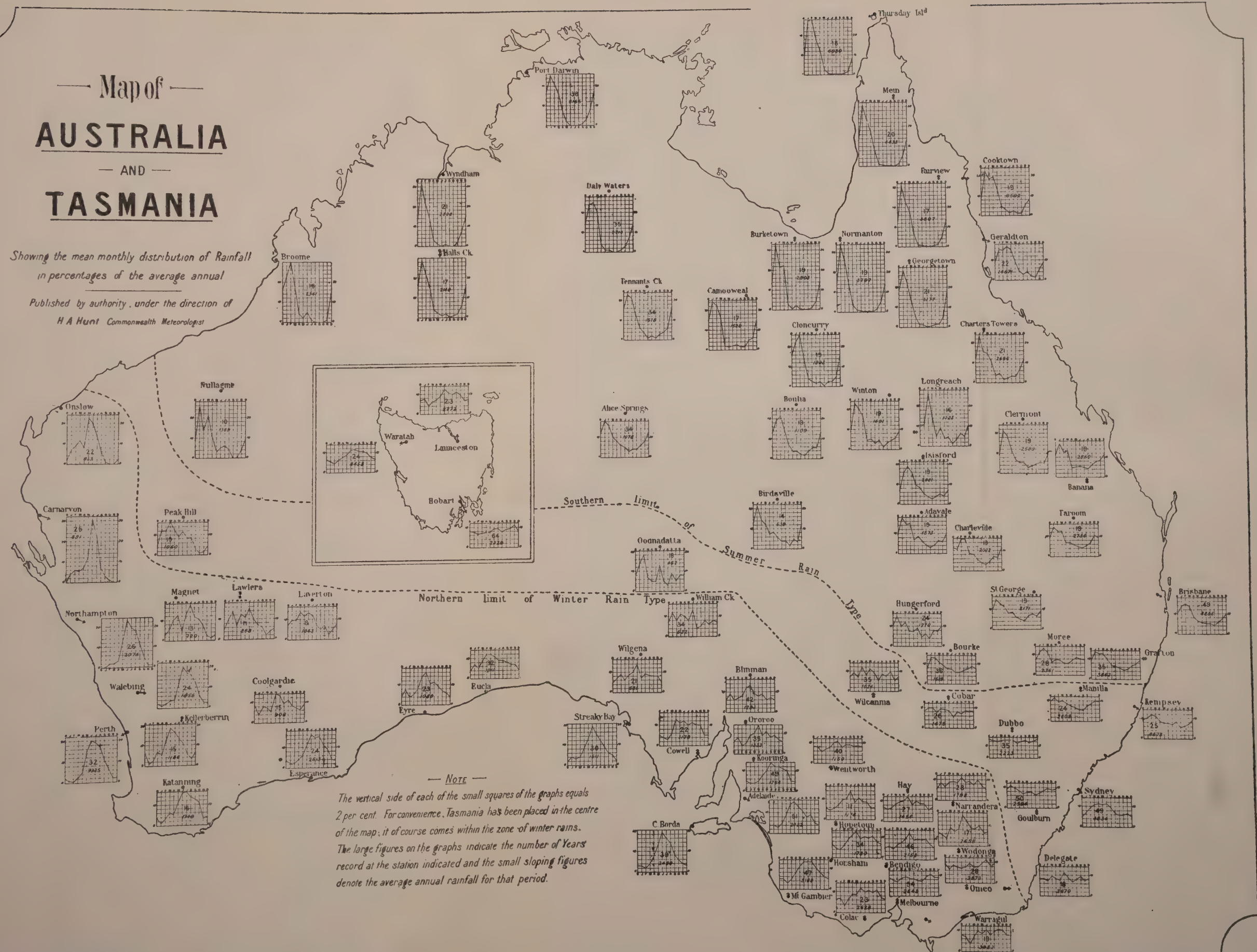
EXPLANATION OF GRAPH.

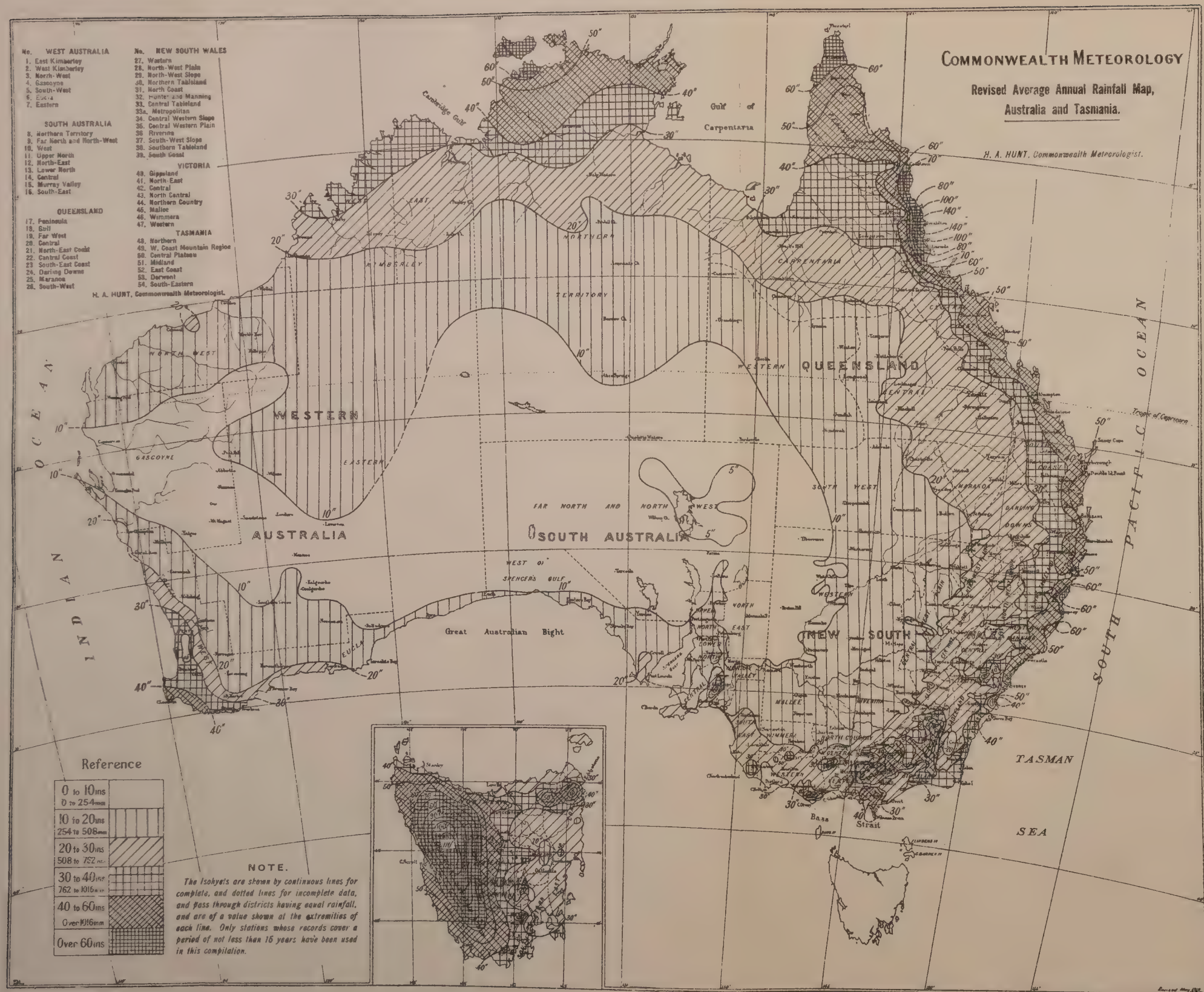
The six continuous curves on the upper part of the diagram shew the fluctuations of mean monthly temperatures of the Australian capitals from 1901 to 1909. The base of each small square denotes one month, and the vertical side 2° Centigrade or 3.6° Fahrenheit.

The six curves in lower portion of the diagram similarly shew the fluctuations of the mean annual temperatures, from 1871 in the case of Adelaide, Sydney and Melbourne, from 1883, 1887 and 1897 in the case respectively of Hobart, Brisbane and Perth. The base of each rectangle represents one year, and the vertical side 0.3° Centigrade or 0.54° Fahrenheit.

The map shews the areas affected by given amounts of annual rainfall, and is elsewhere given.

Published by authority, under the direction of
H A Hunt Commonwealth Meteorologist





COMPARISON OF RAINFALLS AND TEMPERATURES OF CITIES OF THE WORLD WITH THOSE OF AUSTRALIA.

Place.	Height above M.S.L.	Annual Rainfall.			Temperature.					
		Average.	Highest.	Lowest.	*Mean Summer.	†Mean Winter.	Highest on Record.	Lowest on Record.	Average Hottest Month.	Average Coldest Month.
	Ft.	Ins.	Ins.	Ins.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.
Amsterdam	6	27.29	40.59	17.60	63.2	36.8	90.0	4.1	64.4	35.4
Auckland	125	43.31	63.72	26.32	66.1	52.5	91.0	31.9	67.2	51.8
Athens	351	15.48	33.32	4.55	79.2	49.1	106.5	19.6	81.1	47.5
Bergen	146	89.10	102.80	73.50	56.8	34.5	88.5	4.8	57.9	33.6
Berlin	115	22.95	30.04	14.25	64.7	32.2	98.6	-13.0	66.0	30.0
Berne	1,877	36.30	58.23	24.69	62.2	30.1	91.4	-3.6	64.4	28.0
Bombay	37	71.15	114.89	33.41	83.5	75.1	100.0	35.9	84.8	74.2
Breslau	482	22.00	28.01	16.45	63.9	30.0	100.0	-23.4	65.5	29.3
Brussels	328	28.35	41.18	17.73	62.6	36.0	95.5	-4.4	63.7	34.5
Budapest	500	25.20	35.28	16.79	68.6	30.2	98.6	-5.1	70.4	28.2
Buenos Ayres	72	36.82	80.73	21.53	73.2	51.5	103.1	25.9	74.2	50.5
Calcutta	21	61.98	89.32	39.38	94.9	67.1	108.2	44.2	85.4	65.5
Cape Town	40	25.50	36.72	17.71	68.1	54.7	102.0	34.0	68.8	53.9
Caracas	3,420	30.03	47.36	23.70	68.3	65.3	87.8	48.2	69.2	63.7
Chicago	823	33.54	45.86	24.52	69.2	25.4	103.0	-23.0	72.4	24.0
Christchurch	25	25.45	35.30	13.54	61.1	43.4	95.7	21.3	61.6	42.4
Christiania	82	22.52	31.73	16.26	61.0	24.4	95.0	-21.1	62.6	23.9
Colombo	40	83.83	139.70	51.60	81.5	79.9	95.8	65.0	82.6	79.1
Constantinople	245	28.75	42.74	14.78	74.0	43.5	103.6	13.0	75.7	42.0
Copenhagen	46	22.33	28.78	13.94	60.7	32.1	90.5	-13.0	62.2	31.4
Dresden	115	26.80	34.49	17.72	62.9	32.4	93.4	-15.3	64.4	31.6
Dublin	47	27.66	35.56	16.60	59.4	42.0	87.2	13.3	60.5	41.7
Dunedin	370	37.06	53.90	22.15	57.3	43.1	94.0	23.0	57.9	42.0
Durban	260	40.79	71.27	27.24	75.6	64.4	110.6	41.1	76.7	63.8
Edinburgh	441	25.21	32.05	16.44	55.8	38.8	85.3	16.6	57.2	38.3
Geneva	1,328	33.48	46.89	21.14	64.4	33.7	...	...	62.2	32.2
Genoa	157	51.29	108.22	28.21	73.8	46.8	94.5	16.7	75.4	45.5
Glasgow	184	38.49	56.18	29.05	52.7	41.0	84.9	6.6	58.0	38.4
Greenwich	159	24.12	35.54	16.38	61.3	39.3	100.0	4.0	62.7	38.6
Hong Kong	110	84.10	119.72	45.83	81.3	60.3	97.0	32.0	81.8	58.1
Johannesburg	5,750	31.63	50.00	21.66	65.4	54.4	94.0	23.3	68.2	48.9
Leipzig	384	24.69	31.37	17.10	63.1	31.5	97.3	-14.8	64.8	30.6
Lisbon	312	29.18	52.79	17.32	69.6	51.3	94.1	32.5	70.2	49.3
London	18	24.04	38.20	18.23	61.2	39.3	94.0	9.4	62.8	38.7
Madras	22	49.06	88.41	18.45	86.7	76.0	113.0	57.5	87.6	75.3
Madrid	2,149	16.23	27.48	9.13	73.0	41.2	107.1	10.5	75.7	39.7
Marseilles	246	21.88	43.04	12.28	70.3	45.3	100.4	11.5	72.1	43.3
Moscow	526	18.94	29.28	12.07	63.4	14.7	99.5	-44.5	66.1	11.9
Naples	489	34.00	56.58	21.75	73.6	48.0	99.1	23.9	75.4	46.8
New York	314	42.47	59.68	28.78	72.1	31.7	100.0	-6.0	74.5	30.3
Ottawa	294	33.40	44.44	26.36	67.2	14.1	98.5	-33.0	69.7	12.0
Paris	165	21.92	29.56	16.44	63.5	37.1	101.1	-14.1	65.8	36.1
Pekin	143	24.40	36.00	18.00	77.7	26.6	114.0	-5.0	79.2	23.6
Quebec	296	40.46	47.57	32.12	63.5	12.4	95.5	-34.3	66.3	10.1
Rome	166	32.57	57.89	12.72	74.3	46.0	104.2	17.2	76.1	44.6
San Francisco	155	22.83	38.82	9.31	59.0	51.0	101.0	29.0	51.0	50.0
Shanghai	14	44.13	62.52	27.91	77.4	39.4	102.9	10.2	79.7	37.4
Singapore	8	91.99	158.68	32.71	81.2	78.6	94.2	63.4	81.5	78.3
Stockholm	146	18.31	25.46	11.78	59.7	27.0	91.8	-22.0	62.1	25.7
St. Petersburg	16	21.30	29.52	13.75	61.1	17.4	97.0	-38.2	63.7	15.2
Tokio	70	59.17	77.10	45.72	73.9	38.9	97.9	15.4	77.7	37.1
Trieste	85	42.94	63.14	26.57	73.9	41.3	99.5	14.0	76.3	39.9
Vienna	663	24.50	33.90	16.50	65.7	30.4	97.7	-8.0	67.1	28.0
Vladivostok	55	19.54	33.60	9.39	63.9	11.0	95.7	-21.8	69.4	6.1
Washington	75	43.80	61.33	18.79	74.7	34.5	104.0	-15.0	76.8	32.9
Wellington (N.Z.)	110	49.70	67.68	30.02	61.7	48.4	88.0	30.0	62.4	47.5
Zurich	1,542	45.15	78.27	29.02	63.3	31.3	94.1	-0.8	65.1	29.5

FEDERAL CAPITAL SITE.

	(2,000 to 2,900)				*	†				
Canberra (Dist.)	22.39	41.29	10.45	67.5	41.8	104.0	11.1	68.4	39.7	
Queanbeyan										

THE STATE CAPITALS.

					*	†				
Perth	197	33.11	46.73	20.48	73.0	55.7	107.9	35.3	74.2	55.0
Adelaide	140	21.04	30.87	13.43	73.1	52.9	116.3	32.0	74.2	51.5
Brisbane	137	46.95	88.26	16.17	76.7	59.5	108.9	36.1	77.2	58.0
Sydney	146	47.97	82.76	21.49	70.9	53.8	108.5	35.9	71.6	52.3
Melbourne	115	25.51	36.61	15.61	66.5	49.9	111.2	27.0	67.5	48.4
Hobart	160	23.57	40.67	13.43	61.7	46.6	105.2	27.0	62.4	45.3

* Mean of the three hottest months. † Mean of the three coldest months.

17. **Climatological Tables.**—The means, averages, extremes, totals, etc., for a number of climatological elements have been determined from long series of observations at the Australian capitals. These are given in the following tables:—

CLIMATOLOGICAL DATA FOR PERTH, W.A.

LAT. 31° 57' S., LONG. 115° 51' E. HEIGHT ABOVE M.S.L. 197 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, and CLEAR DAYS.

Month.	Bar. corrected to 32° F., Mm. Sea-Level and Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	28	15	15	15	15	14	15	16	15
January ...	29.911	797 27/98	0.71	11,458	S	10.39	1.4	2.7	16.7
February ...	29.927	650 6/08	0.67	10,097	S S E	8.76	1.2	2.8	14.1
March ...	29.930	601 17/99	0.55	10,100	S S E	7.67	1.0	3.3	14.3
April ...	30.074	955 25 0/1	0.45	8,857	S E	4.84	0.8	4.4	8.9
May ...	30.079	768 5/12	0.36	8,159	E N E	2.65	2.0	5.4	6.2
June ...	30.065	861 27/10	0.40	8,286	N N E	1.69	1.7	5.9	4.7
July ...	30.066	949 11/90	0.41	8,652	N N E	1.63	2.5	5.6	6.2
August ...	30.088	966 15/08	0.43	8,924	W S W	2.35	1.4	5.4	6.7
September ...	30.057	864 11/05	0.49	9,186	S W	3.30	1.7	5.4	6.6
October ...	30.044	686 15/98	0.55	10,081	S S W	5.27	0.9	5.2	7.8
November ...	29.994	777 18/97	0.61	10,240	S	7.72	0.8	3.9	12.3
December ...	29.932	672 31/98	0.67	11,115	S	9.86	1.5	3.1	16.0
Year { Totals ...	—	—	—	—	—	66.13	16.9	—	120.7
Averages ...	30.021	—	0.52	9,600	S	—	—	4.4	—
Extremes ...	—	966 15/8/03	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water, min. 3 ft. below surface
	Mean Max.	Mean	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	16	16	16	16	16	16	15	14	—
January ...	84.2	63.0	73.6	107.0	16/97	50.6 25/01	56.4 171.1	4/04	42.4 25/02
February ...	85.0	63.4	74.2	106.8	6/98	47.7 1/02	59.1 169.0	4/99	41.2 1/02
March ...	81.6	60.7	71.2	104.3	6/7/06	45.8 8/03	58.5 161.6	+	36.7 8/03
April ...	76.1	56.5	66.4	99.7	9/10	42.4 2/01	57.3 152.0	11/01	35.0 2/01
May ...	68.5	52.4	60.4	90.4	2/07	39.9 *	50.5 138.2	15/02	31.0 28/12
June ...	63.6	48.9	56.2	77.1	9/09	36.9 14/98	40.2 131.0	5/04	30.2 14/98
July ...	63.6	47.5	55.0	73.5	24/99	36.4 19/06	37.4 131.0	31/98	27.6 21/11
August ...	62.5	45.0	53.8	80.4	30/02	35.3 31/08	45.1 134.1	+	27.9 10/11
September ...	63.9	48.1	56.0	86.4	28/00	39.0 18/00	47.4 144.8	19/02	32.0 17/13
October ...	65.7	50.1	57.9	93.4	17/06	41.2 10/03	52.2 152.6	30/01	33.4 1/10
November ...	69.2	52.6	60.9	100.9	27/01	42.0 1/01	58.9 161.5	17/03	35.5 §
December ...	74.8	56.0	65.4	107.9	20/04	48.0 2/10	59.9 168.3	20/04	39.1 2/10
Year { Averages ...	73.0	55.0	64.0	—	—	—	—	—	—
Extremes ...	—	—	—	107.9 20/12/04	35.3 31/8/08	72.6 171.1	4/1/04	27.6 21/7/11	—

* 17 and 18, 1899. † 1/59 and 1/09. ‡ 29/1898 and 18/1902. § 6/10 and 14/12.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.				Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.
No. of yrs. over which observation extends	16	16	16	37	37	37	37	37	—	16
January ...	52	59	45	0.33	3	2.17 1879	nil *	1.74 28/79	—	2.6
February ...	54	64	48	0.31	2	2.30 1883	nil †	0.90 10/83	—	2.1
March ...	57	66	48	0.71	4	4.50 1896	nil ‡	1.53 17/76	—	4.2
April ...	63	70	54	1.65	7	4.97 1882	0.05	2.62 30/04	—	8.4
May ...	73	81	63	4.88	14	12.13 1879	0.98 1903	2.80 20/79	—	11.8
June ...	78	84	72	6.51	16	12.11 1890	2.16 1877	2.55 16/00	—	12.1
July ...	78	81	72	6.44	16	10.90 1902	2.42 1876	3.00 4/91	—	12.1
August ...	74	79	68	5.55	17	10.33 1882	0.46 1902	2.79 7/03	—	11.1
September ...	69	76	64	3.37	14	7.72 1903	0.69 1877	1.73 23/09	—	8.7
October ...	62	75	56	2.06	11	7.87 1890	0.49 1892	1.38 15/10	—	6.0
November ...	56	62	49	0.76	6	2.12 1880	nil 1891	1.11 30/03	—	4.5
December ...	52	61	46	0.54	4	3.05 1888	nil 1886	1.72 1/88	—	3.3
Year { Totals ...	—	—	—	33.11	114	—	—	—	—	86.9
Averages ...	62	—	—	—	—	—	—	—	—	—
Extremes ...	—	84	45	—	—	12.13 5/79	nil §	3.00 4/7/91	—	—

* 1888, 1894, 1897, and 1911. † 1885, 1891, 1896, and 1903. ‡ 1877, 1884, and 1886. § 1890 and 1894. § January, February, March, November, and December, various years.

THE CLIMATE AND METEOROLOGY OF AUSTRALIA.

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CLIMATOLOGICAL DATA FOR ADELAIDE, S.A.

LAT. 34° 56' S., LONG. 138° 35' E. HEIGHT ABOVE M.S.L. 140 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	No. of yrs. over which observation extends	Bar. corrected to 32° F. M.n. Sea Level and Standard Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds 9 a.m. 3 p.m., & 9 p.m.	No. of Clear Days.
			Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
		56	35	35	35	35	43	41	45	31
January ...	...	29.915	758 19/99	0.36	8,151	S W & S	8.96	2.2	3.5	7.7
February ...	...	29.932	691 22/96	0.31	6,903	S W & S	7.31	2.0	3.4	7.0
March ...	...	30.038	628 9/12	0.26	6,569	S W to S E	5.76	2.2	4.0	6.7
April ...	...	30.118	773 10/96	0.23	6,318	S W & S †	3.39	1.7	5.0	3.9
May ...	...	30.125	760 9/80	0.21	6,260	N E to N	2.00	1.8	5.7	1.7
June ...	...	30.099	750 12/78	0.26	6,723	N E to N	1.22	2.2	6.2	1.2
July ...	...	30.131	674 25/82	0.26	6,868	N E to N	1.28	1.5	5.8	1.4
August ...	...	30.100	773 31/97	0.29	7,273	N E to N †	1.84	2.2	5.7	2.0
September ...	...	30.038	720 2/87	0.32	7,445	N E & S W †	2.82	2.4	5.2	2.6
October ...	...	29.966	768 28/98	0.36	8,081	S W & N E †	4.73	3.5	4.9	3.7
November ...	...	29.973	677 2/04	0.35	7,754	S W to S	6.53	3.9	4.5	5.4
December ...	...	29.920	675 12/91	0.36	8,131	W S W to S	8.37	2.8	3.8	6.9
Year { Totals ...	...	—	—	—	—	—	54.21	28.4	—	50.2
Averages ...	...	30.034	—	0.30	7.231	S W	—	—	4.8	—
Extremes ...	...	—	773*	—	—	—	—	—	—	—

* 10/4/96 and 31/8/97.

† With tendency N.E.

‡ With tendency S.W

§ Equal.

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface
	Mean	Mean	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	56	56	56	56	56	56	35	52	38
January ...	86.6	61.7	74.2	116.3 26/58	45.1 21/84	71.2	180.0 18/82	36.5 14/79	70.8
February ...	86.1	62.0	74.0	113.6 12/99	46.4 13/05	67.2	170.5 10/00	36.7 24/78	70.9
March ...	80.9	58.9	69.9	108.0 12/61	44.8 —/57	63.2	174.0 17/83	33.8 27/80	68.2
April ...	73.3	54.6	63.9	98.0 10/66	39.6 15/59	58.4	155.0 17/83	30.3 27/08	64.0
May ...	65.4	50.1	57.7	88.3 5/66	36.9 †	51.4	148.2 12/79	25.9 10/91	59.1
June ...	60.1	46.7	53.4	76.0 23/65	32.5 27/06	43.5	138.8 18/79	24.5 20/79	54.7
July ...	58.6	44.4	51.5	74.0 11/06	32.0 24/08	42.0	134.5 26/90	23.3 25/11	52.2
August ...	61.9	45.8	53.8	85.0 31/11	32.3 17/59	52.7	140.0 31/92	23.5 7/88	53.3
September ...	66.2	47.8	57.0	90.7 23/82	32.7 4/58	58.0	160.5 23/82	26.2 15/08	56.5
October ...	72.4	51.3	61.9	100.5 30/59	35.0 —/57	64.5	158.8 19/82	28.5 7/96	60.7
November ...	78.8	55.4	67.1	113.5 21/65	40.8 2/09	72.7	166.9 20/78	31.5 2/09	65.2
December ...	83.4	58.8	71.1	114.2 14/76	43.0 ‡	71.2	175.7 7/99	32.5 4/84	68.6
Year { Averages ...	72.8	53.1	62.9	—	—	84.3	—	—	62.0
Extremes ...	—	—	—	116.3 26/1/58	32.0 24/7/08	—	180.0 18/1/82	23.3 25/7/11	—

* Taken at Lighthouse at entrance to Port River.

† 26/1895 and 24/1904.

‡ 16/61 and 4/06.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	45	45	45	74	74	74	74	74	41
January ...	36	59	33	0.73	4	4.00 1850	nil	2.30 2/89	—
February ...	42	56	37	0.60	4	2.67 1-58	nil †	1.81 5/90	4
March ...	47	58	40	1.06	6	4.60 1878	nil ‡	3.50 5/78	10
April ...	56	72	44	1.87	10	6.78 1853	0.06 1910	3.15 5/60	14
May ...	68	76	49	2.74	13	7.75 1875	0.20 1891	2.75 1/53	16
June ...	77	84	70	3.10	16	7.80 1847	0.42 1886	1.45 2/49	15
July ...	76	87	72	2.66	16	5.38 1865	0.36 1899	1.75 10/65	17
August ...	71	77	65	2.51	16	6.24 1852	0.76 1911	9.23 19/51	16
September ...	63	72	54	1.95	14	4.64 1940	0.45 1896	1.42 25/93	15
October ...	52	67	44	1.74	11	3.83 1870	0.31 1888	2.24 16/08	12
November ...	44	57	38	1.14	8	3.55 1851	0.34 1885	1.88 25/58	7
December ...	39	50	33	0.94	6	3.98 1861	nil 1904	1.89 29/40	4
Year { Totals ...	—	—	—	21.04	124	—	—	—	135
Averages ...	54	—	—	—	—	7.90	—	—	—
Extremes ...	—	87	33	—	—	—	nil	3.50 5/3/78	—

* 1849, 1849, 1878 and 1906.

† 1843, 1860, etc.

‡ 1859, etc.

§ January, February, March and December, various years. || and 25/84.

THE CLIMATE AND METEOROLOGY OF AUSTRALIA.
CLIMATOLOGICAL DATA FOR BRISBANE, QUEENSLAND.

LAT. 27° 28' S., LONG. 153° 2' E. HEIGHT ABOVE M.S.L. 137 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M. Sea Level and Stan- dard Gravity from 9 a.m. & 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds, 9 a.m. & 3 p.m.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	26	—	—	—	26	3	—	26	—
January ...	29.869	—	—	—	E	6.49	—	6.2	—
February ...	29.893	—	—	—	S E	4.85	—	6.2	—
March ...	29.951	—	—	—	S	4.35	—	6.0	—
April ...	30.043	—	—	—	S	3.83	—	5.1	—
May ...	30.097	—	—	—	S	2.95	—	4.9	—
June ...	30.060	—	—	—	S & W	2.19	—	4.3	—
July ...	30.062	—	—	—	S & W	2.42	—	3.9	—
August ...	30.087	—	—	—	S & S W	2.48	—	4.0	—
September ...	30.024	—	—	—	S	3.90	—	3.8	—
October ...	29.996	—	—	—	N & N E	4.99	—	4.5	—
November ...	29.960	—	—	—	N E & E	5.65	—	5.2	—
December ...	29.883	—	—	—	N E & E	7.09	—	5.6	—
Year { Totals ...	—	—	—	—	—	51.19	—	—	—
Year { Averages ...	29.994	—	—	—	S'y to E'y	—	—	5.0	—
Year { Extremes ...	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water mn. 3 ft. be- low surface			
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.				
No. of yrs. over which observation extends	26	26	26	26	26	26	26	26	—			
January	85.4	69.0	77.2	108.9	14/02	58.8	4/93	50.1	162.7	20/89	49.9	4/93
February	84.5	68.5	76.5	101.9	11/04	58.7	*	43.2	165.2	6/02	49.3	9/89
March	82.2	66.5	74.3	96.8	16/83	55.6	30/95	41.2	160.0	1/87	46.0	28/02
April	78.9	61.5	70.2	95.2	†	48.6	17/00	46.6	150.1	1/08	37.0	17/00
May	75.3	55.3	64.4	88.8	18/97	41.3	24/99	47.5	147.0	1/05	29.5	8/97
June	69.3	50.7	60.0	81.5	6/06	36.3	29/08	45.2	133.9	6/06	25.4	23/88
July	68.2	47.9	58.0	83.4	28/98	36.1	†	47.3	134.4	29/89	25.9	11/90
August	71.2	49.9	60.6	87.5	28/07	37.4	6/87	50.1	140.7	30/88	27.1	9/96
September	75.8	54.6	65.2	95.2	16/12	40.7	1/96	54.5	155.5	26/03	30.4	1/89
October	79.8	59.8	69.8	101.4	18/93	43.3	3/99	58.1	156.5	31/89	34.9	8/89
November	82.7	63.9	73.3	105.4	13/98	48.5	2/05	56.9	162.3	7/89	38.8	1/05
December	85.5	67.5	76.5	105.9	26/93	56.4	13/12	49.5	159.5	23/89	49.1	3/94
Year {	Averages ...	78.1	59.6	68.8	—	—	—	—	—	—	—	—
	Extremes...	—	—	—	108.9	36.1	72.8	165.2	23.9	—	—	—
					14/1/02		||		6/2/10		11/7/90	

* 10/11/04.

† 9/96 and 5/03.

‡ 12/94 and 2/96.

|| 12/7/94 and 2/7/96.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.		
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew	
No of yrs. over which observation extends	26	26	26	61	53	61	61	—	—	—	
January ...	67	82	54	6.66	14	27.72	1895	0.61	1882	18.31	21/87
February ...	71	84	57	6.63	14	40.39	1893	0.77	1904	8.36	16/93
March ...	74	87	56	6.20	16	34.04	1870	0.58	1868	11.18	14/08
April ...	72	80	61	3.64	13	15.28	1867	0.04	1897	3.93	20/92
May ...	74	86	63	2.92	10	13.85	1876	0.00	1846	5.62	9/79
June ...	74	83	64	2.62	8	14.03	1873	0.02	1895	6.01	9/93
July ...	72	80	65	2.33	8	8.46	1889	0.00	1841	3.54	†
August ...	70	80	63	2.35	7	14.67	1879	0.00	*	4.89	12/87
September ...	65	76	43	2.05	8	5.43	1886	0.10	1907	2.46	2/84
October ...	62	74	51	2.78	10	9.99	1882	0.14	1900	1.95	20/89
November ...	60	73	52	3.65	10	10.43	1846	0.00	1842	4.60	16/86
December ...	63	68	53	5.12	12	13.97	1910	0.35	1865	6.60	28/71
Year { Totals ...	—	—	—	46.95	130	—	—	—	—	—	—
Year { Averages ...	69	—	—	—	—	40.39	—	—	—	—	—
Year { Extremes ...	—	87	43	—	—	—	0.00	—	—	—	—
						2/1893	†	18.31	21/1/87		

— signifies no record kept.

* 1862, 1869, 1880.

† 5/1846, 7/1841, 8/1862, 1869, 1880, 11/1842.

‡ 15/76, 16/89.

** Means and Extremes to end 1912.

CLIMATOLOGICAL DATA FOR SYDNEY, N.S.W.

LAT. 33° 52' S., LONG. 151° 12' E. HEIGHT ABOVE M.S.L. 146 FT.
BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M.S. Sea Level and Stan- dard Gravity from 24 hourly Readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pres- sure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	54	44	44	43	51	33	53	50	48
January ...	39.901	721 1/71	0.38	8,323	N E	5.10	4.7	5.9	1.8
February ...	39.945	871 12/69	0.35	7,235	N E	3.96	4.2	6.1	1.1
March ...	30.037	943 20/70	0.26	6,884	N E	3.35	4.1	5.7	1.7
April ...	30.095	803 6/82	0.23	6,324	N E	2.45	3.9	5.1	2.5
May ...	30.098	758 6/98	0.23	6,432	W	1.63	3.5	4.9	3.1
June ...	30.080	712 7/00	0.30	7,208	W	1.36	2.3	4.8	3.3
July ...	30.092	930 17/79	0.29	7,353	W	1.41	2.6	4.4	4.1
August ...	30.093	756 22/72	0.27	7,042	W	1.72	3.4	4.1	4.5
September ...	30.012	964 6/74	0.31	7,319	W	2.56	4.1	4.4	3.5
October ...	29.966	926 4/72	0.34	7,965	N E	3.71	5.0	5.0	2.1
November ...	29.953	720 13/68	0.35	7,783	N E	4.41	5.6	5.6	1.5
December ...	29.881	938 3/84	0.36	8,214	N E	5.26	5.6	5.4	1.8
Year { Totals ...	—	—	—	—	—	36.92	48.9	—	31.0
Averages ...	30.013	—	0.31	7,340	N E	—	—	5.1	—
Extremes ...	—	964 6/9/74	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min 3 ft. be- low surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	54	54	54	54	54	54	53	53	50
January ...	78.3	64.9	71.6	108.5 13/96	51.2 14/65	57.3	160.9 13/96	44.2 18/97	71.4
February ...	77.2	64.8	71.1	101.0 19/66	49.3 28/63	51.7	162.1 16/98	43.4 25/91	71.9
March ...	75.4	63.0	69.2	102.6 3/69	48.8 14/86	53.8	172.3 4/89	42.3 13/93	71.0
April ...	70.9	58.1	64.6	89.0 4/09	44.6 27/64	44.4	144.1 10/77	38.0 13/92	68.4
May ...	65.0	52.0	58.5	83.5 1/59	40.2 22/59	43.3	129.7 1/96	30.9 7/88	64.2
June ...	60.4	48.2	54.3	74.7 24/72	38.1 29/62	36.6	123.0 14/78	28.7 30/95	59.9
July ...	58.9	45.7	52.3	74.9 17/71	35.9 12/90	39.0	144.3 15/93	24.0 4/93	57.3
August ...	62.3	47.5	54.9	82.0 31/84	36.8 3/72	45.2	149.0 30/78	27.7 30/95	57.6
September ...	66.4	51.4	58.9	91.1 24/07	40.8 18/64	50.3	142.2 12/78	30.1 17/05	60.0
October ...	71.1	55.8	63.5	99.7 19/08	43.3 2/99	56.4	149.9 13/96	32.7 9/05	63.3
November ...	74.3	59.6	67.0	102.7 21/78	45.8 1/05	56.9	158.5 28/99	38.8 1/06	66.9
December ...	77.3	62.8	70.1	107.5 31/04	49.3 2/59	58.2	171.5 4/88	42.3 8/75	69.6
Year { Averages ...	69.8	56.2	63.0	—	—	—	—	—	65.0
Extremes ...	—	—	—	108.5 13/1/96	35.0 12/7/90	72.6	172.3 4/3/89	24.0 4/7/93	—

* Taken at Fort Denison.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.				Rainfall.				Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. days Dew
No. of yrs. over which observation extends	54	54	54	54	54	54	54	54	52	52
January ...	70	78	59	3.62	14.2	15.26 1911	0.43 1888	7.08 13/11	0.002	1.3
February ...	73	81	60	4.74	14.3	18.56 1873	0.34 1902	8.00 25/73	0.004	2.0
March ...	75	85	63	5.14	15.4	18.70 1870	0.42 1876	5.66 25/90	0.007	3.3
April ...	77	87	64	5.25	13.2	24.49 1861	0.06 1868	7.52 29/60	0.016	6.0
May ...	77	90	66	4.92	15.4	20.87 1889	0.21 1885	8.36 28/89	0.022	6.6
June ...	76	89	68	5.13	12.9	16.30 1885	0.19 1904	5.17 16/84	0.018	5.5
July ...	77	88	66	4.79	12.5	13.21 1900	0.12 1862	5.72 28/08	0.016	5.4
August ...	74	84	64	3.26	11.6	14.89 1889	0.04 1885	5.33 2/60	0.014	5.0
September ...	69	79	60	2.85	12.2	14.05 1879	0.08 1862	5.69 10/79	0.008	4.0
October ...	68	77	55	2.79	12.6	10.81 1902	0.21 1867	6.37 13/02	0.006	3.0
November ...	67	79	54	2.91	12.5	9.88 1865	0.19 1910	4.23 19/00	0.004	2.3
December ...	68	77	52	2.69	12.8	8.47 1910	0.45 1876	4.75 13/10	0.003	1.6
Year { Totals ...	—	—	—	47.99	159.6	—	—	—	0.120	46.0
Averages ...	73	—	—	—	—	—	—	—	—	—
Extremes ...	—	90	52	—	—	24.49 4/1861	0.04 8/1885	8.90 25/2/73	—	—

THE CLIMATE AND METEOROLOGY OF AUSTRALIA.

CLIMATOLOGICAL DATA FOR MELBOURNE, VICTORIA.

LAT. 37° 50' S., LONG. 144° 59' E. HEIGHT ABOVE M.S.L. 115 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. in Sea Level and Standard Gravity from 9 a.m., 3 & 9 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	55	43	43	43	43	40	—	55	—
January ...	29.913	583 10/97	0.29	7,345	S W, S E	6.34	—	5.1	—
February ...	29.962	566 8/68	0.28	6,441	S W, S E	5.01	—	5.1	—
March ...	30.037	677 9/81	0.22	6,398	S W, S E	3.88	—	5.5	—
April ...	30.101	597 7/68	0.19	5,719	S W, N W	2.35	—	5.9	—
May ...	30.106	693 12/65	0.19	5,958	N W, N E	1.46	—	6.5	—
June ...	30.078	761 13/76	0.24	6,461	N W, N E	1.10	—	6.7	—
July ...	30.097	735 8/74	0.23	6,482	N W, N E	1.05	—	6.3	—
August ...	30.067	657 14/75	0.26	6,882	N W, N E	1.47	—	6.3	—
September ...	29.996	617 11/72	0.29	7,108	N W, S W	2.25	—	6.1	—
October ...	29.965	599 5/66	0.29	7,377	S W, N W	3.27	—	6.0	—
November ...	29.952	734 13/66	0.29	7,083	S W, S E	4.50	—	5.8	—
December ...	29.896	655 1/75	0.30	7,503	S W, S E	5.70	—	5.5	—
Year { Totals ...	—	—	—	—	—	38.38	—	—	—
{ Averages ...	30.014	—	0.26	6,730	S W, N W	—	—	5.9	—
{ Extremes ...	—	899 5/10/66	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water min. 3 ft. below surface
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.	
No. of yrs. over which observation extends	57	57	57	57	57	57	53	52	—
January ...	73.3	56.7	67.5	111.2	14/62	42.0 28/85	69.2 178.5	14/62	30.2 28/85
February ...	77.8	56.8	67.3	109.5	7/01	40.3 9/65	69.2 167.5	15/70	30.9 6/91
March ...	74.9	54.6	64.7	105.5	2/93	37.1 17/84	68.4 164.5	1/68	28.9 —
April ...	68.4	50.6	59.5	94.0	6/65	34.8 24/88	59.2 152.0	8/61	25.0 2/97
May ...	61.5	46.6	54.1	83.7	7/05	31.3 26/95	52.4 142.6	3/59	23.2 21/97
June ...	56.8	43.9	50.3	73.2	1/07	28.0 11/66	44.2 139.0	11/61	20.4 17/95
July ...	55.4	41.5	48.4	68.4	24/78	27.0 21/69	41.4 135.8	27/80	20.5 12/08
August ...	58.8	43.3	51.0	77.0	20/85	28.3 11/63	48.7 137.4	29/69	21.3 14/02
September ...	62.5	45.4	54.0	82.3	30/07	31.1 16/08	51.2 142.1	20/67	24.7 13/07
October ...	66.9	48.1	57.5	96.1	30/85	32.1 3/71	64.0 154.3	28/68	25.9 3/71
November ...	71.5	51.1	61.3	105.7	27/94	36.5 2/96	69.2 159.6	29/65	24.6 2/96
December ...	75.3	53.7	64.5	110.7	15/76	40.0 4/70	70.7 170.3	20/69	33.2 10/4
Year { Averages ...	67.3	49.4	58.3	—	—	—	—	—	—
{ Extremes ...	—	—	—	111.2	27.0	84.2	178.5	20.4	—
				14/1/62	21/7/69		14/1/62	17/6/95	

* 17/1884 and 20/1897.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.				Dew.	
	Mean 9 a. 3 p.m.	Highest Mean	Lowest Mean.	Mean Monthly.	Mean No. of Days of Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.
No. of yrs. over which observation extends	55	55	55	57	56	56	56	53	—
January ...	64	73	52	1.85	7	5.68 1904	0.04 1878	2.97 9/97	—
February ...	65	75	58	1.74	7	6.24 1904	0.03 1870	2.14 7/04	—
March ...	67	78	59	2.18	9	7.50 1911	0.18 1859	3.05 15/78	—
April ...	72	83	62	2.32	11	6.71 1901	0.33 1908	2.28 22/01	—
May ...	78	86	64	2.15	12	4.31 1863	0.45 1901	1.85 7/91	—
June ...	80	88	73	2.11	14	4.51 1859	0.73 1877	1.74 21/04	—
July ...	80	88	73	1.86	13	7.02 1891	0.57 1902	2.71 12/91	—
August ...	75	81	65	1.81	14	3.59 1909	0.48 1903	1.87 17/81	—
September ...	72	81	61	2.35	14	5.87 1870	0.52 1907	2.62 12/80	—
October ...	70	79	60	2.64	13	7.61 1869	0.57 1895	3.00 17/69	—
November ...	66	75	53	2.20	10	5.05 1881	0.25 1895	2.57 16/76	—
December ...	64	75	49	2.30	9	7.18 1883	0.11 1904	2.62 28/07	—
Year { Totals ...	—	—	—	25.51	133	—	—	—	—
{ Averages ...	71	—	—	—	—	7.61	0.03	3.05	—
{ Extremes ...	—	88	49	—	—	20/10/69	1/2/70	15/3/78	—

— signifies no record kept.

CLIMATOLOGICAL DATA FOR HOBART, TASMANIA.

LAT. 42° 53' S., LONG. 147° 20' E. HEIGHT ABOVE M.S.L. 160 FT.

BAROMETER, WIND, EVAPORATION, LIGHTNING, CLOUDS, AND CLEAR DAYS.

Month.	Bar. corrected to 32° F. M. Sea Level and Gravity from 9 a.m. and 3 p.m. readings.	Wind.				Mean Amount of Evaporation.	No. of Days Lightning.	Mean Amount of Clouds.	No. of Clear Days.
		Greatest Number of Miles in one day.	Mean Hourly Pressure. (lbs.)	Total Miles.	Prevailing Direction.				
No. of yrs. over which observation extends	28	—	—	—	5	3	5	50	—
January	29.832	—	—	—	S E	5.74	0.6	5.9	—
February	29.918	—	—	—	S E & N	4.18	1.2	5.9	—
March	29.941	—	—	—	N & S E	2.88	1.0	6.1	—
April	29.945	—	—	—	N to N W	1.99	1.0	5.9	—
May	29.992	—	—	—	N to N W	1.21	0.2	5.9	—
June	29.955	—	—	—	N to N W	0.64	1.2	6.0	—
July	29.929	—	—	—	N to N W	0.87	0.4	5.7	—
August	29.931	—	—	—	N to N W	1.24	1.4	5.8	—
September	29.839	—	—	—	N to N W	1.73	1.2	6.7	—
October	29.852	—	—	—	N	2.80	1.0	6.2	—
November	29.799	—	—	—	N & S E	4.18	1.0	6.2	—
December	29.803	—	—	—	N W & S E	4.86	2.2	5.9	—
Year { Totals	—	—	—	—	—	32.42	12.4	—	—
Averages	29.893	—	—	—	N	—	—	5.9	—
Extremes	—	—	—	—	—	—	—	—	—

TEMPERATURE.

Month.	Mean Temperature.			Extreme Shade Temperature.		Greatest Range.	Extreme Temperature.		Sea water 3 ft. below surface				
	Mean Max.	Mean Min.	Mean	Highest.	Lowest.		Highest in Sun.	Lowest on Grass.					
No. of yrs. over which observation extends	42	42	42	66	66	66	17	41	—				
January ...	71.7	53.0	62.4	105.0	1/00	40.3	2/06	64.7	160.0	+	30.6	19/97	—
February ...	71.6	53.1	62.4	104.4	12/99	39.0	20/87	65.4	165.0	24/98	23.3	1887	—
March ...	68.2	50.7	59.5	98.8	5/46	36.0	31/05	62.8	150.0	3/05	27.5	30/02	—
April ...	62.7	47.4	55.1	90.0	2/56	30.0	25/56	60.0	142.0	1893	25.0	1886	—
May ...	57.3	43.5	50.4	77.5	1/41	29.2	20/02	46.3	128.0	1889	20.0	19/02	—
June ...	52.6	40.9	46.8	75.0	7/74	28.0	22/79	47.0	122.0	12/94	21.0	6/87	—
July ...	51.6	38.9	45.3	72.0	22/77	27.0	1866	45.0	118.7	19/96	18.7	16/86	—
August ...	54.8	40.7	47.7	82.0	1862	30.0	10/73	55.0	129.0	1887	20.1	7/09	—
September ...	58.6	42.9	50.8	80.0	9/72	30.0	12/41	50.0	138.0	23/93	22.7	1896	—
October ...	62.7	45.2	53.9	91.5	28/45	32.0	12/89	59.5	156.0	9/93	23.8	+	—
November ...	66.7	48.3	57.5	98.0	20/88	37.0	*	61.0	154.0	19/92	26.0	1/08	—
December ...	69.7	51.0	60.3	105.2	30/97	38.0	3/06	67.2	156.0	18/05	27.2	1886	—
Year {	Averages ...	62.3	46.3	54.3	—	—	—	—	—	—	—	—	—
	Extremes ...	—	—	—	105.2	30/12/97	27.0	1866	78.2	165.0	24/2/98	18.7	16/7/86

* 24/84, 13/87, 11/85, and 7/00. + 5/86 and 13/05. † 1886 and 1899.

HUMIDITY, RAINFALL, AND DEW.

Month.	Humidity.			Rainfall.					Dew.	
	Mean 9 a.m.	Highest Mean.	Lowest Mean.	Mean Monthly.	Mean No. of Days Rain.	Greatest Monthly.	Least Monthly.	Greatest in One Day.	Mean Amount of Dew.	Mean No. of days Dew.
No. of yrs. over which observation extends	33	33	33	70	54	70	70	61	—	—
January ...	62	75	51	1.80	10	5.91 1893	0.03 1841	2.59 30/05	—	—
February ...	64	76	51	1.45	9	9.15 1854	0.07 1847	4.50* 25/54	—	—
March ...	68	76	59	1.65	10	7.60 1854	0.02 1843	2.06 14/11	—	—
April ...	75	85	60	1.80	11	6.50 1909	0.07 1904	5.02 20/09	—	—
May ...	80	90	68	1.91	14	6.37 1905	0.10 1843	3.22 14/58	—	—
June ...	83	94	75	2.22	15	8.15 1889	0.22 1852	4.11 14/89	—	—
July ...	83	97	74	2.10	15	5.98 1849	0.30 1850	2.00 18/78	—	—
August ...	80	92	68	1.83	14	10.16 1858	0.23 1854	4.35 12/58	—	—
September ...	74	87	61	2.14	15	7.14 1844	0.39 1847	3.50 29/84	—	—
October ...	67	75	58	2.24	16	6.67 1906	0.26 1850	2.58 4/06	—	—
November ...	62	74	50	2.50	14	8.94 1849	0.16 1868	3.70 30/85	—	—
December ...	59	73	51	1.93	12	9.00 1875	0.11 1842	2.27 27/07	—	—
Year { Totals ...	—	—	—	23.57	155	—	—	—	—	—
Averages ...	72	—	—	—	—	—	—	—	—	—
Extremes ...	—	97	50	—	—	10.16 8/1858	0.02 3/1843	5.02 20/4/09	—	—

— Signifies no record kept. * 4.50, 25/54; 4.18, 26.54.

SECTION IV.

POPULATION.

§ 1. Commonwealth Population—Its Distribution and Fluctuation.

1. **Present Population.**—The estimated population of the several States of the Commonwealth at the end of 1901 and of each of the last five years is as shewn in the following table. These estimates have been amended on the basis of the results disclosed by the Census of 3rd April, 1911, as described on pp. 112-118 of Year Book No. 6.

POPULATION OF COMMONWEALTH, on 31st DECEMBER 1901 and 1908-12.

Year.	States.						Territories.		Commonwealth.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-ern.	Federal. (a)	
MALES.									
1901	720,840	608,436	282,291	180,440	117,885	90,945	3,999	...	2,004,836
1908	832,419	614,937	302,370	194,903	148,447	97,942	2,963	...	2,193,981
1909	845,228	631,021	314,481	198,719	151,325	98,514	2,927	...	2,242,215
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	...	2,296,308
1911	888,138	668,759	337,955	212,650	168,094	98,594	2,662	1,068a	2,377,920
1912	934,846	689,825	344,139	218,613	174,056	101,561	2,854	1,074	2,466,968
FEMALES.									
1901	654,615	601,464	224,430	178,890	75,716	84,288	674	...	1,820,077
1908	751,504	635,512	254,729	190,928	111,224	93,791	609	...	2,038,297
1909	768,671	646,001	263,864	194,178	114,350	94,605	576	...	2,081,745
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	...	2,128,775
1911	808,337	670,343	284,174	205,522	126,087	94,885	586	853(a)	2,190,787
1912	842,688	690,736	292,286	211,477	132,073	95,644	621	866	2,266,391
TOTAL.									
1901	1,375,455	1,209,900	506,721	359,330	193,601	175,233	4,673	...	3,824,913
1908	1,583,923	1,250,449	557,099	385,831	259,671	191,733	3,572	...	4,232,278
1909	1,613,899	1,277,022	577,845	392,897	265,675	193,119	3,503	...	4,323,960
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	...	4,425,083
1911	1,696,475	1,339,102	622,129	418,172	294,181	193,479	3,248	1,921a	4,568,707
1912	1,777,534	1,380,561	636,425	430,090	306,129	197,205	3,475	1,940	4,733,359

(a) Part of New South Wales prior to 1911.

2. **Growth of Population.**—(i.) 1788 to 1824. From 1788, when settlement first took place in Australia, until December 1825, when Van Diemen's Land (now Tasmania) became a separate colony, the whole of the British Possessions in Australia were regarded as one colony, viz., that of New South Wales. The population during this period increased very slowly, and at the end of 1824 had reached only 48,072.

The population with which settlement in Australia was inaugurated, and that at the end of each year until 1824, are as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1788 to 1824.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1788 ^a	...	...	1,035	1806	5,389	2,521	7,910
1788	...	...	859	1807	5,939	2,855	8,794
1789	...	...	645	1808	6,822	3,441	10,263
1790	...	...	2,056	1809	7,618	3,942	11,560
1791	...	...	2,873	1810	7,585	3,981	11,566
1792	...	...	3,264	1811	7,697	4,178	11,875
1793	...	...	3,514	1812	8,132	4,498	12,630
1794	...	...	3,579	1813	9,102	4,855	13,957
1795	...	...	3,466	1814	9,295	4,791	14,086
1796	2,953	1,147	4,100	1815	9,848	5,215	15,063
1797	3,160	1,184	4,344	1816	11,690	5,863	17,553
1798	3,367	1,221	4,588	1817	14,178	7,014	21,192
1799	3,804	1,284	5,088	1818	17,286	8,573	25,859
1800	3,780	1,437	5,217	1819	21,366	10,106	31,472
1801	4,372	1,573	5,945	1820	23,784	9,759	33,543
1802	5,208	1,806	7,014	1821	26,179	9,313	35,492
1803	5,185	2,053	7,238	1822	27,915	9,449	37,364
1804	5,313	2,285	7,598	1823	30,206	10,426	40,632
1805	5,395	2,312	7,707	1824	36,871	11,201	48,072

^a. On 26th January. Recent research by Dr. J. F. Watson, now Editor of the Historical Records of Australia, goes to shew that the original nucleus was 1024 persons.

(ii.) 1825 to 1858. The period extending from 1825 to 1859 witnessed the birth of the colonies of Tasmania (then known as Van Diemen's Land), Western Australia, South Australia, Victoria, and Queensland. The years in which these came into existence as separate colonies were as follows:—Tasmania, 1825; Western Australia, 1829; South Australia, 1834; Victoria, 1851; Queensland, 1859.

The estimated population of the Commonwealth during each year of this transition period is as follows:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1825 to 1858.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1825	40,288	12,217	52,505	1842	153,758	87,226	240,984
1826	41,289	12,593	53,882	1843	158,846	92,002	250,848
1827	43,053	13,247	56,300	1844	165,034	99,253	264,287
1828	44,778	13,419	58,197	1845	173,159	105,989	279,148
1829	46,946	14,988	61,934	1846	181,342	111,907	293,249
1830	52,885	17,154	70,039	1847	190,265	118,532	308,797
1831	57,037	18,944	75,981	1848	201,612	130,716	332,328
1832	62,254	21,683	83,937	1849	221,978	151,384	373,362
1833	71,669	26,426	98,095	1850	238,683	166,673	405,356
1834	76,259	29,297	105,556	1851	256,975	180,690	437,665
1835	81,929	31,425	113,354	1852	304,126	209,670	513,796
1836	89,417	35,703	125,120	1853	358,203	242,789	600,992
1837	94,881	39,607	134,488	1854	414,337	280,580	694,917
1838	105,271	46,597	151,868	1855	470,118	323,142	793,260
1839	115,480	54,459	169,939	1856	522,144	354,585	876,729
1840	127,306	63,102	190,408	1857	574,800	395,487	970,287
1841	144,114	76,854	220,968	1858	624,380	426,448	1,050,828

(iii.) *1859 to 1912.* From 1859, the year in which Queensland came into existence as a separate colony, until the beginning of 1901, when the Commonwealth of Australia was inaugurated under the provisions of the Commonwealth Constitution Act, Australia consisted of six States, practically independent of each other in all matters of government. During this period, the population of the Commonwealth increased from 1,050,828 at the end of 1858 to 3,765,339 on the 31st December, 1900. The particulars for this period are given in the table hereunder.

During the twelve years that have elapsed since the federation of the States was effected the population of the Commonwealth has increased by 968,020, from 3,765,339 on 31st December, 1900, to 4,733,359 on 31st December, 1912. See table hereunder:—

POPULATION OF COMMONWEALTH ON 31st DECEMBER, 1859 to 1912.

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1859	644,376	452,929	1,097,305	1886	1,510,954	1,277,096	2,788,050
1860	668,560	477,025	1,145,585	1887	1,559,118	1,322,244	2,881,362
1861	669,373	498,776	1,168,149	1888	1,610,548	1,371,129	2,981,677
1862	683,650	523,268	1,206,918	1889	1,649,094	1,413,383	3,062,477
1863	704,259	555,033	1,259,292	1890	1,692,831	1,458,524	3,151,355
1864	740,433	584,750	1,325,183	1891	1,736,617	1,504,368	3,240,985
1865	773,278	616,765	1,390,043	1892	1,766,772	1,538,981	3,305,753
1866	800,648	643,307	1,443,955	1893	1,791,815	1,570,080	3,361,895
1867	819,127	664,721	1,483,848	1894	1,824,217	1,602,543	3,426,760
1868	849,272	690,280	1,539,552	1895	1,855,539	1,636,082	3,491,621
1869	875,139	717,018	1,592,157	1896	1,887,174	1,665,924	3,553,098
1870	902,494	745,262	1,647,756	1897	1,917,460	1,700,323	3,617,783
1871	928,918	771,970	1,700,888	1898	1,937,629	1,727,086	3,664,715
1872	947,422	795,425	1,742,847	1899	1,959,074	1,756,914	3,715,988
1873	972,907	821,613	1,794,520	1900	1,976,992	1,788,347	3,765,339
1874	1,001,096	848,296	1,849,392	1901	2,004,836	1,820,077	3,824,913
1875	1,028,489	869,734	1,898,223	1902	2,028,008	1,847,310	3,875,318
1876	1,061,477	897,202	1,958,679	1903	2,045,144	1,871,448	3,916,592
1877	1,102,340	928,790	2,031,130	1904	2,072,783	1,901,367	3,974,150
1878	1,132,573	959,591	2,092,164	1905	2,100,118	1,932,859	4,032,977
1879	1,168,781	993,562	2,162,343	1906	2,126,730	1,964,755	4,091,485
1880	1,204,514	1,027,017	2,231,531	1907	2,160,213	2,001,509	4,161,722
1881	1,247,059	1,059,677	2,306,736	1908	2,193,981	2,038,297	4,232,278
1882	1,289,892	1,098,190	2,388,082	1909	2,242,215	2,081,745	4,323,960
1883	1,357,423	1,148,313	2,505,736	1910	2,296,308	2,128,775	4,425,083
1884	1,411,996	1,193,729	2,605,725	1911	2,377,920	2,190,787	4,568,707
1885	1,460,394	1,234,124	2,694,518	1912	2,466,968	2,266,391	4,733,359

It will be seen from the foregoing tables that the population of Australia attained its first million in 1858, seventy years after settlement was first effected; its second million nineteen years later, in 1877; its third million twelve years later, in 1889; and its fourth million sixteen years later, in 1905, while it appears probable that its fifth million will be reached during 1914.

The growth of the total population of the Commonwealth generally, and of each State therein, is graphically shewn on page 127, and of each sex considered separately on pages 128 and 129.

3. Variations in Masculinity.—In the second issue of this publication, on pages 163 to 165, an extended table was published shewing the masculinity of the population of each of the States for each year from 1796 to 1907. In the fifth issue, on page 123, the figures in this table for the years 1901-7 were modified to agree with the corrected estimates of the population, consequent on the Census of April 3rd, 1911. The following table gives similar particulars for every fifth year from 1800 to 1910 and for the years 1911 and 1912. The graphs corresponding to these figures will be found on page 133:—

MASCULINITY OF COMMONWEALTH POPULATION, 1800 to 1912.

Year.	States.						Territories.		C'wealth.
	N.S. W.	Victoria.	Q'land.	S. A. (a)	W. Aust.	Tasmania	North'n (b)	Federal. (c)	
1800	263.05	...	...	...	...	...	...	...	263.05
1805	233.35	...	...	...	...	...	...	...	233.35
1810	190.53	...	...	...	...	...	...	...	190.53
1815	188.84	...	...	...	...	...	...	...	188.84
1820	243.71	...	...	...	...	...	...	...	243.71
1825	325.51	...	...	...	...	...	...	...	325.51
1830	317.18	...	...	...	297.29	293.44	...	...	308.80
1835	268.40	...	...	...	190.26	251.68	...	...	260.71
1840	204.16	...	...	130.10	163.51	229.53	...	...	201.75
1845	153.33	...	...	132.75	150.22	215.62	...	...	163.37
1850	138.47	...	...	129.15	154.81	179.49	...	...	143.20
1855	125.08	187.40	...	100.62	193.55	123.65	...	...	145.48
1860	131.29	158.85	149.63	105.06	166.93	123.61	...	...	140.15
1865	120.08	129.60	158.47	109.11	173.90	116.42	...	...	125.38
1870	120.48	121.59	150.31	105.85	161.17	112.98	...	...	121.10
1875	119.09	114.46	152.61	107.24	148.61	111.45	...	...	118.25
1880	120.45	110.42	142.50	114.33	135.06	111.70	...	...	117.28
1885	121.95	110.61	143.95	110.58	135.47	110.73	...	...	118.33
1890	118.05	110.65	132.21	108.60	146.85	111.88	...	...	116.06
1895	113.78	105.23	128.15	105.05	126.54	108.16	...	...	113.41
1900	111.14	101.23	125.33	104.04	157.54	107.97	753.60	...	110.55
1905	111.05	97.69	121.75	100.17	141.35	106.09	496.76	...	108.65
1910	109.23	98.71	119.02	103.12	132.90	104.14	486.32	...	107.87
1911	109.87	99.78	118.93	103.47	133.32	103.91	454.27	125.21	108.54
1912	110.94	99.87	117.74	103.37	131.79	106.19	459.58	124.02	108.85

(a) Including Northern Territory prior to 1900.

(b) Included in South Australia prior to 1900.

(c) Part of New South Wales prior to 1911.

§ 2. Influences affecting Growth and Distribution of Population.

1. **Mineral Discoveries.**—The discovery of gold in Australia in 1851 was undoubtedly one of the most influential factors in bringing about a rapid settlement of the country. Its effect may be gauged by a comparison of the increase during the ten years preceding, with that during the ten years succeeding the discovery. From 31st December, 1840, to 31st December, 1850, the increase was only 214,948 (viz., from 190,408 to 405,356). The rush of people to the newly-discovered goldfields during the succeeding decennium caused an increase of no less than 740,229, the population advancing to 1,145,585 on 31st December, 1860. In 1861, owing to the opening up in that year of the New Zealand goldfields, a rush of population from Australia set in, the result being that the net increase of population of the Commonwealth, which in 1855 amounted to 98,343, and even in 1860 was as much as 48,280, fell in 1861 to 22,564. In fact, during the year 1861 the departures from Australia exceeded the arrivals by 5958, the gain of 22,564 being due to the births exceeding the deaths by 28,522.

In more recent years the gold discoveries of Western Australia in 1886 and subsequent years, led to such extensive migration to that State, that its population, which on 31st December, 1885, amounted to only 35,959, increased in 27 years by no less than 270,170, totalling 306,129 on 31st December, 1912. In this case, however, the additions to the population of the western State were largely drawn for some years from those of the eastern States, so that the actual gain of population to the Commonwealth was but slight.

2. **Pastoral Development.**—Very early in the colonisation of Australia it was recognised that many portions were well adapted for pastoral pursuits, and pastoral developments have led to a considerable distribution of population in various directions.

As the numbers engaged in connection therewith, compared with the value of the interests involved, are relatively small, and as pastoral occupancy tends to segregation rather than aggregation of population, the growth of the pastoral industry is but slightly reflected in the population statistics of the Commonwealth.

3. Agricultural Expansion.—At the present time the area annually devoted to crops in the Commonwealth is over 13 millions of acres. Although considerable in itself, this area, viewed in relation to the total area of the Commonwealth, is relatively small, and represents considerably less than 1 per cent. of the total area. Per head of population of the Commonwealth the area under crop, however, is $2\frac{3}{4}$ acres, a fairly high amount when allowance is made for the recency of Australian settlement. Over 80 per cent. of the area under crop is devoted to the production of wheat and hay, which require for the profitable production in Australia a considerable area in the one holding. Thus on the whole the agricultural districts of Australia are somewhat sparsely populated, though in a less marked degree than is the case in the pastoral areas.

4. Progress of Manufacturing Industries.—One direct effect of the development of manufacturing industries is the concentration of population in places offering the greatest facilities for the production of the particular commodities. In Australia, where manufacturing industries are as yet in their infancy, the tendency throughout has been to concentrate the manufacturing establishments in each metropolis. This has accentuated the growth of the capital cities, which growth, when compared with that of the rest of the country, appears somewhat abnormal.

5. Influence of Droughts. The droughts, which at times so seriously affect the agricultural and pastoral prospects of Australia, have a marked influence on the distribution of population. Districts, which in favourable seasons were fairly populous, have in times of drought, temporarily become more or less depopulated until the return of better conditions. This movement, however, ordinarily affects only the internal distribution of the population and not the total, but severe drought may even make its influence felt in the statistics of the total population of Australia. Thus in the case of the drought of 1902-3, the departures from the Commonwealth exceeded the arrivals for the two years 1903 and 1904 by 12,859. It may be noted also, that for the former of these years, the natural increase of population by excess of births over deaths was abnormally low, being only 51,150, as compared with 54,698 in the preceding and 60,541 in the succeeding year. As the solution of the problem of dealing with droughts is advanced, their influence will be less marked.

6. Other Influences.—(i.) *Commercial Crises.* The effect on population of a commercial crisis, such as that which occurred in Australia in the early years of the final decade of the last century, is clearly indicated on comparing the migration statistics of the Commonwealth for the five years 1887-91 with those for the five years 1892-96. During the former period, the arrivals in the Commonwealth exceeded the departures by no less than 146,872. In the latter period, the corresponding excess amounted to only 2064.

(ii.) *South African War.* The war in South Africa has apparently also left its impress on the population statistics of the Commonwealth, the departures during 1899 and 1900 exceeding the arrivals for the same period by no less than 10,546.

A reference to the graphs of population on pages 127 to 132 will illustrate the preceding observations.

§ 3. Special Characteristics of Commonwealth Population.

1. Sex Distribution.—In respect of the relative proportions of the sexes in its population, Australia has, since the first settlement of the continent in 1788, differed materially from the older countries of the world. In the latter, the populations have, in general, grown by natural increase, and their composition usually reflects that fact, the numbers of males and females being in most countries approximately equal, with a more or less marked tendency, however, for the females to slightly exceed the males. The

excess of females arises from a variety of causes, amongst which may be mentioned—(a) higher rate of mortality amongst males; (b) greater propensity on the part of males to travel; (c) the effects of war; (d) employment of males in the army, navy, and mercantile marine; (e) preponderance of males amongst emigrants. On the other hand, the last-mentioned cause has tended naturally to produce an excess of males in Australia, since the majority of those emigrating to Australia have been males. The circumstances under which the colonisation of Australia was first undertaken, and the remoteness of this country from Europe, have combined to accentuate this feature.

There is little doubt that the continent presented few attractions to the explorers who visited its shores, mainly on the west and north, during the sixteenth, seventeenth, and early part of the eighteenth centuries, and it was only when the Declaration of Independence of the United States, in 1776, closed to the British prison authorities the North American plantations, which had previously been used as receptacles for the deportation of convicts, that the overcrowding of the galls caused them to consider the advisability of converting the great southern continent into a convict settlement. This idea was put into practice in 1787, when the first consignment left England, arriving in Sydney Cove on the 26th January, 1788. Reports concerning the number of persons actually landed are conflicting, but it appears that the total may be set down approximately at 1035, including the military. Details as to the sexes are not available, but the males must have largely preponderated. Indeed, nearly nine years later, on the 31st December, 1796, in a total population of 4100, there were 257 males to every 100 females.

The subsequent progress of Australia resulting from extensive mineral discoveries and the development of its great natural resources, pastoral, agricultural, forestal, etc., have tended to attract male rather than female immigrants, particularly in view of the distance from the principal centres of European population. Even at the Census of 3rd April, 1911, after more than 123 years of settlement, there were 108 males to each 100 females, and this notwithstanding the equalising tendency due to additions to the population by means of births and to deductions therefrom by the deaths of immigrants.

The terms "masculinity" and "femininity" have been used to express the proportion of the sexes in any group, the former indicating the ratio of males to females, the latter the reciprocal of this, viz., the ratio of females to males. The term "masculinity" is that which has been adopted by the Commonwealth Bureau of Census and Statistics, and the masculinity of any group is usually expressed numerically as the number of males to each 100 females. The masculinity of the population of the Commonwealth at intervals of five years from 1800 to 1910 and for the year 1912 is as follows:—

MASCULINITY OF THE COMMONWEALTH POPULATION, 1800 to 1912.

Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.	Year.	Number of Males to each 100 Females.
1800	263.05	1840	201.75	1880	117.28
1805	233.35	1845	163.38	1885	118.33
1810	190.53	1850	143.20	1890	116.06
1815	188.84	1855	145.48	1895	113.41
1820	243.71	1860	140.15	1900	110.55
1825	329.77	1865	125.38	1905	108.65
1830	308.30	1870	121.10	1910	107.87
1835	260.71	1875	118.25	1912	108.85

The curious inequalities of the increases in the number of males and in the number of females for the Commonwealth as a whole, and for the individual States respectively, will be seen by referring to the graphs on pages 128 and 129.

The significance of the rates of masculinity shewn in the above table will perhaps be better understood by a comparison with the corresponding information for other countries. This has been made in the next table, which shews, for some of the principal countries of the world for which such particulars are available, the masculinity of the population according to the most recent statistics:—

MASCULINITY OF THE POPULATION OF VARIOUS COUNTRIES.

Country.	Year.	No. of Males to each 100 Females.	Country.	Year.	No. of Males to each 100 Females.
Canada ...	1911	112.93	Belgium ...	1910	98.34
New Zealand ...	1912	110.81	Netherlands	1911	98.17
Australia ...	1912	108.85	Prussia ...	1910	97.93
Servia ...	1910	106.77	German Empire	1910	97.43
United States of America	1910	106.03	Russia (European)	1896	97.18
India (Feudatory States)	1901	106.02	France ..	1906	96.73
British India ...	1911	104.59	Austria ...	1910	96.53
Bulgaria ...	1910	103.56	Switzerland	1900	96.36
Rumania ...	1899	103.30	Sweden ...	1911	95.62
Japan ...	1912	102.17	Spain ...	1900	95.36
Greece ...	1907	101.37	Denmark ...	1911	94.27
Poland (Russian)	1911	101.33	Scotland ...	1911	94.12
Ireland ...	1911	99.72	England and Wales	1911	93.67
Hungary ...	1900	99.07	Norway ...	1910	93.49
Italy ...	1901	98.99	Portugal ...	1911	90.12

2. Age Distribution.—The causes which operated to bring about an excess of males in the population of the Commonwealth were equally effective in rendering the age distribution essentially different from that of older countries. The majority of the immigrants, whether male or female, were in the prime of life, and as the Australian birth-rate in earlier years was a comparatively high one, the effect produced was a population in which the proportion of young middle-aged persons was somewhat above, and the proportion for advanced ages somewhat below the normal. With the progress of time, however, the age distribution for Australia has fallen more and more into line with that for the older countries, and now, except in shewing a lower proportion at old age and a slightly higher at young ages, does not differ essentially therefrom.

Thus in the Commonwealth at the Census of 3rd April, 1911, the age distribution of the population was as shewn in the table hereunder; that for England and Wales for the same Census, is given also for the sake of comparison:—

AGE DISTRIBUTION OF POPULATION. COMMONWEALTH, AND ENGLAND AND WALES.

Age Group.	Population of COMMONWEALTH, 3rd April, 1911.	Percentage on Total Population.	Population of ENGLAND and WALES, 3rd April, 1911.	Percentage on Total Population.
Under 15 ...	1,409,823	31.65	11,050,867	30.63
15 and under 65 ...	2,854,753	64.08	23,141,109	64.16
65 and upwards ...	190,429	4.27	1,878,516	5.21
Total ...	4,455,005	100.00	36,070,492	100.00

During the past 50 years, the age distribution of the Australian population has varied considerably, as will be seen from the following table, which gives for each sex the proportion per cent. of the total population in the age groups "under 15," "15 and under 65," and "65 and over." The figures upon which these percentages have been computed

are those furnished by the Censuses of the several States and the Commonwealth Census of 1911. Those for 1861 include the results of the Western Australian Census of 1859, while those for 1871 include the results of the Western Australian and Tasmanian Censuses of 1870 :—

AGE DISTRIBUTION OF COMMONWEALTH POPULATION, 1861 to 1911.

Census Year.	Males.				Females.				Persons.			
	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.	Under 15 Years.	15 and under 65.	65 and over.	Total.
	%	%	%	%	%	%	%	%	%	%	%	%
1861	31.41	67.42	1.17	100	43.03	56.20	0.77	100	36.28	62.72	1.00	100
1871	38.84	59.11	2.05	100	46.02	52.60	1.38	100	42.09	56.17	1.74	100
1881	36.37	60.85	2.78	100	41.89	56.07	2.04	100	38.91	58.65	2.44	100
1891	34.77	62.02	3.21	100	39.36	58.08	2.56	100	36.90	60.20	2.90	100
1901	33.87	61.82	4.31	100	36.50	59.85	3.65	100	35.12	60.88	4.00	100
1911	30.84	64.82	4.34	100	32.52	63.28	4.20	100	31.65	64.08	4.27	100

The excess of males over females, previously referred to, is found mainly in ages of 21 and upwards. In the total population under the age of 21 there were, at the date of the last Census, less than 103 males to each 100 females, while in that aged 21 and upwards there were more than 112 males to each 100 females. In the absence of a large immigration of males in excess of females, therefore, the disparity between the sexes in Australia would soon be eliminated.

3. Race and Nationality.—(i.) *Constitution of Australia's Population.* As regards race, the population of the Commonwealth may be conveniently divided into two main groups, one comprising the aboriginal natives of Australia, and the other the various immigrant races which, since the foundation of settlement in 1788, have made the Commonwealth their home. Under the head of "immigrant races" would, of course, be included not only those residents of Australia who had been born in other countries, but also their descendants born in Australia.

(a) *The Aborigines.* It would appear that the aboriginal population of Australia was never large, and that the life led by them was, in many parts of the country, a most precarious one. With the continued advance of settlement the numbers have shrunk to such an extent that in the more densely populated States they are practically negligible. Thus, at the Census of 1911 the number of full-blooded aboriginals who were employed by whites or were living in proximity to settlements of whites was stated to be only 19,939. In some of the States, however, more particularly in Queensland, South Australia, Western Australia, and the Northern Territory, there are, in addition, considerable numbers of natives still in the "savage" state, numerical information concerning whom is of a most unreliable nature, and can be regarded as little more than the result of mere guessing.

Ethnologically interesting as is this remarkable and rapidly-disappearing race, practically all that has been done to increase our knowledge of them, their laws, habits, customs, and languages, has been the result of more or less spasmodic and intermittent effort on the part of enthusiasts either in private life or the public service. An enumeration of them has never been seriously undertaken in connection with any Australian Census, though a record of the numbers who were in the employ of whites, or living in contiguity to the settlements of whites, has on the occasion of the recent Censuses usually been made. As stated above, various guesses at the number of aboriginal natives at present in Australia have been made, and the general opinion appears to have prevailed that 150,000 might be taken as a rough approximation to the total. More recent estimates, however, have given results considerably below this total. Thus, in his report of June, 1910, the Queensland Chief Protector of Aborigines estimates the total at 74,753, distributed as follows :—New

South Wales, 6897; Victoria, 256; Queensland, 20,000; South Australia (including the Northern Territory), 20,600; Western Australia, 27,000. A somewhat similar estimate made at an earlier date by Dr. Roth, formerly Chief Protector of Aborigines in Queensland, gave Queensland at least 18,000; Western Australia at least 24,000, and the Northern Territory from 20,000 to 22,000. In view of these figures it would appear that the number of aboriginal natives in Australia may be said to be not more than 100,000. The whole matter, however, is involved in considerable doubt.

The number of aboriginal natives enumerated in the several States and Territories of the Commonwealth at the Census of 1911 was as shewn hereunder, the figures given relating as before stated only to those in a civilised or semi-civilised condition.

ABORIGINAL NATIVES ENUMERATED AT CENSUS OF 1911.

Persons, etc.	N.S.W	Victoria.	Queens- land.	South Australia.	Western Australia	Tas- mania.	Northern Territory.	Federal Territory	C'wlth.
Males ...	1,152	103	5,145	802	3,433	2	743	5	11,385
Females ...	860	93	3,542	637	2,936	1	480	5	8,554
Total	2,012	196	8,687	1,439	6,369	3	1,223	10	19,939
Masculinity (a)	133.9	110.8	145.3	125.9	116.9	200.0	154.9	100.0	133.1

(a) Number of males per hundred females.

These figures, as noted above, refer only to those natives who were, at the date of the Census, in the employ of whites or were living in contiguity to the settlements of whites.

In the Commonwealth Constitution Act provision is made for aboriginal natives to be excluded for all purposes for which statistics of population are made use of under the Act, but the opinion has been given by the Commonwealth Attorney-General that, "in reckoning the population of the Commonwealth, half-castes are not aboriginal natives within the meaning of section 127 of the Commonwealth of Australia Constitution Act, and should therefore be included." It may be added, however, that as "half-castes," living in the nomadic state, are practically undistinguishable from aborigines, it has not always been found practicable to make the distinction, and further, that no authoritative definition of "half-caste" has yet been given.¹

(b) *Immigrant Races.* As regards the immigrant races, it may be said that they consist mainly of natives of the three divisions of the United Kingdom and their descendants. The proportion of Australian-born contained in the population of the Commonwealth has, in recent years, increased rapidly, and at the Census of 3rd April, 1911, out of a total population of 4,424,537 persons whose birthplaces were specified, no fewer than 3,667,670, or 82.90 per cent., were Australian born, while of the remainder, 591,729, or 13.37 per cent., were natives of the United Kingdom, and 31,868, or 0.72 per cent., were natives of New Zealand, that is, 96.99 per cent. of the total population at the date of the Census had been born in either Australasia or the United Kingdom. The other birthplaces most largely represented in the Commonwealth were Germany, 32,990 (0.75 per cent.); China, 20,775 (0.47 per cent.); Scandinavia (comprising Sweden, Norway and Denmark), 14,700 (0.33 per cent.); Polynesia, 3410 (0.08 per cent.); British India, 6644 (0.15 per cent.); United States of America, 6642 (0.15 per cent.); and Italy, 6719 (0.15 per cent.). The total population of Asiatic birth was 36,442 (0.82 per cent.), of whom 3474 were born in Japan.

(c) *Non-European Races.* The Census taken on the 3rd April, 1911, was the first occasion on which a systematic attempt had been made to ascertain the number of persons of non-European races in Australia. On former occasions the inquiry did not usually

1. An article on the Aborigines of Australia, specially written for the Year Book by W. Ramsay Smith, D.Sc., M.B., C.M., F.R.S.E., Permanent Head of the Department of Public Health of South Australia, will be found in Year Book No. 3, Section IV., § 12, page 158.

extend further than a request that in all cases in which the person enumerated was an Aboriginal or a Chinese, whether of the full-blood or of the half-blood, the fact should be specially noted in the column on the Census schedule relating to birthplace. At the recent Census the inquiry as to race was made one of the leading items, and all persons of non-European race were required to have their race specified. From the figures so obtained the following table has been compiled:—

PERSONS OF NON-EUROPEAN RACE IN THE COMMONWEALTH, 3rd APRIL, 1911
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States and Territories.	Australian	Asiatic.		African.		American.		Polynesian.		Indefinite.		Total.	
	Half-caste Aborigines	Full-blood.	Half-caste	Full-blood	Half-caste	Full-blood	Half-caste	Full-blood	Half-caste	Full-blood	Half-caste	Full-blood.	Half-caste
States—													
N. S. Wales ...	4,512	10,983	1,390	169	166	10	7	343	70	2	...	11,507	6,145
Victoria ...	447	5,972	1,056	58	63	6	9	12	5	1	2	6,049	1,582
Queensland ...	2,508	9,123	940	53	65	37	5	2,123	142	...	...	11,336	3,660
S. Australia ...	692	1,049	175	18	21	5	1	5	4	2	...	1,079	893
W. Australia ...	1,475	5,578	129	48	15	7	2	25	3	...	...	5,658	1,624
Tasmania ...	227	532	127	4	6	...	...	5	2	...	...	541	362
Territories—													
Northern ...	244	1,594	35	7	...	...	...	11	1	...	...	1,612	280
Federal ...	8	7	...	...	...	...	...	...	...	...	...	7	8
Total ...	10,113	34,838	3,852	357	336	65	24	2,524	227	5	2	37,789	14,554

The proportion of population of Non-European race (exclusive of full-blooded aborigines) in each State is shewn in the following table, full-blood and half-caste non-Europeans being shewn separately:—

* **PROPORTION OF NON-EUROPEAN RACES IN THE COMMONWEALTH, 3rd APRIL, 1911**
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States and Territories.	Total Population.	Non-European Races.					
		Full-blood.		Half-caste.		Total.	
		Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.	Number.	Number per 1000 of Total Population.
States—							
N. S. Wales	1,646,734	11,507	6.99	6,145	3.73	17,652	10.72
Victoria ...	1,315,551	6,049	4.60	1,582	1.20	7,631	5.80
Queensland ...	605,813	11,336	18.71	3,660	6.04	14,996	24.75
S. Australia ...	408,558	1,079	2.64	893	2.19	1,972	4.83
W. Australia ...	282,114	5,658	20.05	1,624	5.76	7,282	25.81
Tasmania ...	191,211	541	2.83	362	1.89	903	4.72
Territories—							
Northern ...	3,310	1,612	487.01	280	84.59	1,892	571.60
Federal ...	1,714	7	4.08	8	4.67	15	8.75
Total C'wealth	4,455,005	37,789	8.48	14,554	3.27	52,343	11.75

(ii.) *Biological and Sociological Significance.* As regards race and nationality, therefore, the population of Australia is fundamentally British, and thus furnishes an example of the transplanting of a race into conditions greatly differing from those in which it had been developed. The biological and sociological significance of this will ultimately appear in the effects on the physical and moral constitution produced by the

complete change of climatic and social environment, for the new conditions are likely to considerably modify both the physical characteristics and the social instincts of the constituents of the population. At present the characteristics of the Australian population, whether physical, mental, moral, or social, are only in the making, and probably it will not be possible to point to a distinct Australian type until three or four generations more have passed. Even then it is hardly likely that with the great extent of territory and varying conditions presented by the Commonwealth there will be but one type; on the contrary, a variety of types may be expected. The Australian at present is little other than a transplanted Briton, with the essential characteristics of his British forbears, the desire for freedom from restraint, however, being perhaps somewhat accentuated. The greater opportunity for an open-air existence, and the absence of the restrictions of older civilisations, may be held to be in the main responsible for this.

4. Differences among the States and Territories.—(i.) *Sex Distribution.* The varying circumstances under which the settlement of the several States has been effected, and the essentially different conditions experienced in the due development of their respective resources, have naturally led to somewhat marked differences in the constitution of their populations. In the matter of sex distribution the States in which the normal condition of older countries is most nearly represented are those of Victoria, South Australia, and Tasmania, in the first-mentioned of which the females have, for some years until recently, exceeded the males. In Western Australia and Queensland, on the other hand, the position of affairs is somewhat abnormal, the numbers of males to each 100 females being respectively 132 and 118.

In the Northern Territory, owing to lack of settlement, the masculinity has always been largely predominant, the figures for 1912 giving no less than 460 males to each 100 females.

The variation in the masculinity of the estimated population of the several States and Territories and of the Commonwealth as a whole for the year 1901 and for the past five years will be seen from the following table:—

MASCULINITY (a) OF THE POPULATION, 31st DECEMBER, 1901 and 1908-12.
(COMMONWEALTH.)

Year.	Masculinity of the Population on 31st December. (a.)									
	States.						Territories.		Cwlth.	
	N.S.W.	Vict.	Qld.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal (b)		
1901	...	110.12	101.16	125.78	100.87	155.69	107.90	593.32	...	110.15
1908	...	110.77	96.76	118.70	102.08	133.47	104.43	486.54	...	107.64
1909	...	109.96	97.68	119.41	102.34	132.33	104.13	508.16	...	107.71
1910	...	109.23	98.71	119.02	103.12	132.90	104.14	486.32	...	107.87
1911	...	109.87	99.78	118.93	103.47	133.32	103.91	454.27	125.21	108.54
1912	...	110.94	99.87	117.74	103.37	131.79	106.19	459.58	124.02	108.85

(a) Number of males to each 100 females. (b) Part of New South Wales prior to 1911.

(ii.) *Age Distribution.* The disparity in sex distribution exhibited by the several States is accompanied by a corresponding inequality in the matter of age distribution. The number of persons in each State at the Census of 3rd April, 1911, at what are commonly known as the "dependent," "supporting," and "old" ages, and the proportion of same to total of each State and Commonwealth, were as follows:—

NUMBER AND PROPORTION OF PERSONS IN THE COMMONWEALTH OF DEPENDENT, SUPPORTING, AND OLD AGE, 3rd APRIL, 1911.

State or Territory.	Number of Persons of				Proportion of Population of		
	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).	All ages.	Dependent age (under 15).	Supporting age (15 and under 65).	Old age (65 and upwards).
States—					%	%	%
New South Wales ...	526,625	1,053,400	66,709	1,646,734	31.98	63.97	4.05
Victoria ...	400,260	847,700	67,591	1,315,551	30.42	64.44	5.14
Queensland ...	200,020	383,330	22,463	605,813	33.01	63.28	3.71
South Australia ...	127,290	262,356	18,912	408,558	31.15	64.22	4.63
Western Australia...	87,884	187,574	6,656	282,114	31.15	66.49	2.36
Tasmania ...	66,708	116,604	7,899	191,211	34.89	60.98	4.13
Territories—							
Northern ...	485	2,708	117	3,310	14.65	81.81	3.54
Federal ...	551	1,081	82	1,714	32.15	63.07	4.78
Commonwealth ...	1,409,823	2,854,753	190,429	4,455,005	31.65	64.08	4.27

In Western Australia a larger proportion of its population was of supporting age than in any other State, whilst in Tasmania the proportion was the lowest. On the other hand, in Tasmania the proportion of dependent age was the highest for the Commonwealth, while the Victorian proportion was the lowest. Victoria had the highest and Western Australia the lowest proportion of persons aged 65 years and upwards.

In the Northern Territory the proportions are quite exceptional, the percentage of those of dependent age being much lower, and that of those of supporting age being much higher, than in any other part of the Commonwealth.

(iii.) *Birthplaces.* The following table exhibits, in a very condensed form, the distribution of the population of the several States and Territories according to birthplace:—

BIRTHPLACE OF POPULATION AT CENSUS OF 3rd APRIL, 1911.

(COMMONWEALTH.)

Birthplace.	Total Population of Commonwealth at Census.								
	States.						Territories.		C'wealth.
	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North-ern.	Fede-ral.	
Australia...	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other									
European Countries	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia ...	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa ...	1,999	1,498	527	357	423	145	9	...	4,958
America ...	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia	1,204	279	1,728	55	88	44	12	...	3,410
At Sea ...	1,479	1,303	629	422	281	122	2	...	4,238
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total ...	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

The proportions for the several States and Territories for each of the birthplaces shewn in the foregoing table expressed as percentages of the total population, the birthplaces of which were specified, are as follows:—

PERCENTAGE OF COMMONWEALTH POPULATION ACCORDING TO BIRTHPLACE,
3RD APRIL, 1911.

Birthplace.	Percentage of Total Population.								
	States.						Territories.		C'wlth.
	New South Wales.	Victoria.	Queensland.	South Australia	Western Aust.	Tasmania.	Northern	Federal	
	%	%	%	%	%	%	%	%	%
Australia ...	84.19	85.01	74.09	86.16	74.66	90.95	45.86	89.32	82.90
New Zealand ...	0.86	0.77	0.43	0.24	1.10	0.63	0.55	0.24	0.72
U. Kingdom	12.49	12.07	19.90	10.93	18.05	7.10	7.98	9.54	13.35
Other European Countries	1.21	1.18	3.35	1.97	3.37	0.60	1.49	0.30	1.67
Asia ...	0.70	0.51	1.47	0.31	2.14	0.41	43.05	0.30	0.82
Africa ...	0.12	0.11	0.09	0.09	0.15	0.08	0.27	...	0.11
America ...	0.27	0.23	0.28	0.19	0.40	0.15	0.37	0.30	0.25
Polynesia ...	0.07	0.02	0.29	0.01	0.03	0.02	0.37	...	0.08
At Sea ...	0.09	0.10	0.10	0.10	0.10	0.06	0.06	...	0.10
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

As regards distribution in the States according to birthplace, the population of New South Wales is very similar to that of Victoria, the proportions born in the United Kingdom and Asia being slightly higher, and that born in Australia slightly lower, in the case of New South Wales. There is also a rough similarity between the population distributions of Queensland and Western Australia. In both, the Australian-born represent a much smaller, and those born in the United Kingdom, in "Other European Countries" and in Asia, a much larger proportion than is the case with the remaining States. Polynesians were, however, more numerous represented in Queensland at the date of the Census than in any other State. Natives of New Zealand were, proportionately, most numerous in Western Australia. Tasmania had the largest proportion of Australian-born population, viz., 91 per cent., while Queensland, with 74 per cent., had the smallest. On the other hand, nearly 20 per cent. of Queensland's population consisted of natives of the United Kingdom, while only 7 per cent. of the population of Tasmania had been born there. For the Commonwealth as a whole, over 98½ per cent. of the population were from Australasian or European birthplaces.

In the case of the Northern Territory, about 46 per cent. of the population were Australian born, while 43 per cent. were of Asiatic birth.

§ 4. Elements of Growth of Population.

1. **Natural Increase.**—The two factors which contribute to the growth of a population are the "natural increase" by excess of births over deaths, and the "net immigration," i.e., the excess of arrivals over departures. While the relative potency of these factors depends upon a variety of causes, it may be said that, in general, in the case of a new country "net immigration" occupies an important position as a source of increase of population, while in an old country "natural increase," modified more or less by "net emigration," or excess of departures over arrivals, is the principal element causing growth of population. The table hereunder gives the total natural increase, as well as that of males and females:—

NATURAL INCREASE (a) OF THE POPULATION
OF STATES, TERRITORIES, AND COMMONWEALTH, FROM 1861 TO 1912.
MALES.

Period.	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust. (b)	W. Aus.	Tas.	North- ern. (c)	Fed- eral. (d)	C'wealth.
1861 to 1865 ...	22,055	34,286	2,444	9,645	765	3,893	...	...	73,088
1866 to 1870 ...	25,850	34,997	5,789	10,881	754	3,281	...	...	81,502
1871 to 1875 ...	30,067	35,132	6,704	9,979	710	3,077	...	...	85,669
1876 to 1880 ...	34,040	31,985	7,960	13,676	1,023	3,472	...	...	92,156
1881 to 1885 ...	42,658	33,614	7,986	16,969	1,002	5,284	...	...	107,513
1886 to 1890 ...	54,753	39,528	17,872	16,519	1,755	6,093	...	...	136,520
1891 to 1895 ...	56,834	45,606	20,525	15,758	1,436	6,889	...	...	147,048
1896 to 1900 ...	48,692	33,645	17,724	12,562	3,402	6,373	...	...	122,398
1901 to 1905 ...	51,179	34,332	16,628	12,149	8,233	7,955	—223	...	130,303
1906 to 1910 ...	64,127	38,948	21,415	14,500	10,762	8,703	—264	...	158,191
1911 to 1912 ...	29,840	17,733	9,914	7,195	4,460	3,565	— 81	28	72,654
1861 to 1912 ...	460,095	379,806	134,911	139,833	34,352	58,585	— 568	28	1,207,042

FEMALES.

1861 to 1865 ...	26,343	39,615	3,566	9,987	1,105	4,608	...	...	85,224
1866 to 1870 ...	30,327	40,919	7,571	11,223	1,301	4,451	...	...	95,792
1871 to 1875 ...	35,567	41,472	9,706	10,944	1,255	4,192	...	...	103,136
1876 to 1880 ...	40,276	37,551	12,291	14,608	1,555	4,699	...	...	111,010
1881 to 1885 ...	50,204	39,833	15,262	18,033	1,738	6,364	...	...	131,434
1886 to 1890 ...	62,090	48,131	24,238	17,320	2,609	7,228	...	...	161,616
1891 to 1895 ...	63,930	53,190	25,757	16,792	3,376	7,781	...	...	170,826
1896 to 1900 ...	57,107	40,474	24,037	13,443	7,054	6,718	...	...	148,833
1901 to 1905 ...	59,163	39,831	22,910	12,701	11,468	8,027	28	...	154,128
1906 to 1910 ...	71,297	42,629	26,048	14,754	13,354	8,522	33	...	176,637
1911 to 1912 ...	33,550	19,284	12,343	7,567	6,062	3,741	13	21	82,581
1861 to 1912 ...	529,854	442,929	183,729	147,372	50,907	66,331	74	21	1,421,217

PERSONS.

1861 to 1865 ...	48,398	73,901	6,010	19,632	1,870	8,501	...	...	158,312
1866 to 1870 ...	56,177	75,916	13,310	22,104	2,055	7,732	...	...	177,294
1871 to 1875 ...	65,634	76,604	16,410	20,923	1,965	7,269	...	...	188,805
1876 to 1880 ...	74,316	69,536	20,251	23,284	2,608	8,171	...	...	203,166
1881 to 1885 ...	92,862	73,447	23,248	35,002	2,740	11,648	...	...	238,947
1886 to 1890 ...	116,843	87,659	42,110	33,839	4,364	13,321	...	...	298,136
1891 to 1895 ...	120,764	98,796	46,282	32,550	4,812	14,670	...	...	317,874
1896 to 1900 ...	105,799	74,119	41,761	26,005	10,456	13,091	...	...	271,231
1901 to 1905 ...	110,342	74,163	39,538	24,850	19,751	15,982	—195	...	284,431
1906 to 1910 ...	135,424	81,577	47,463	29,254	24,116	17,225	—231	...	334,828
1911 to 1912 ...	63,390	37,017	22,257	14,762	10,522	7,306	— 68	49	155,235
1861 to 1912 ...	989,949	822,735	318,640	287,205	85,259	124,916	—494	49	2,628,259

(a) Excess of Births over Deaths. (b) Including Northern Territory prior to 1901. (c) Included in South Australia prior to 1901. (d) Part of New South Wales prior to 1911.

NOTE.—Minus sign (—) denotes excess of Deaths over Births.

With one exception, viz., Tasmania, for the period 1906 to 1910, the natural increase of females exceeded that of males throughout the years referred to in the foregoing table. The quinquennial period in which the largest natural increase of population took place was that of 1906-10 with a total for the Commonwealth of 334,828. For the individual States the quinquennia of maximum natural increase were as follows:—New South Wales, Queensland, Western Australia and Tasmania, 1906-10; Victoria, 1891-5, and South Australia, 1881-5.

2. **Comparison with other Countries.**—Notwithstanding its comparatively low birth-rate, Australia has a high rate of natural increase, owing to the fact that its death-rate is a very low one. The following table furnishes a comparison between the average rates of natural increase for some of the principal countries of the world for which such information is available, and those for the several States of the Commonwealth and the Dominion of New Zealand :—

NATURAL INCREASE PER 1000 OF MEAN POPULATION (VARIOUS COUNTRIES).

Country.	Increase.	Country.	Increase.	Country.	Increase.
Australasia (1908-12)		Europe—continued.		Europe—continued.	
Tasmania ...	18.84	Prussia ...	14.28	Spain ...	9.30
Western Australia	18.23	Servia ...	14.20	Belgium ...	(b) 8.73
New South Wales	17.90	Denmark ...	14.17	Ireland ...	6.10
Queensland ...	17.49	German Empire	13.39	France ...	0.41
New Zealand ...	17.17	Finland ...	13.27	Asia (1907-11)—	
South Australia...	16.74	Norway ...	12.42	Japan...	(a) 11.00
Commonwealth	16.42	Hungary ...	11.38	Ceylon ...	7.03
Victoria ...	13.32	Italy ...	11.27	America (1907-11)—	
Europe (1907-11)—		England & Wales	11.16	Jamaica ...	14.07
Bulgaria ...	(a) 18.88	Scotland ...	11.09	Canada (Province	
Netherlands ...	14.78	Sweden ...	10.86	of Ontario) ...	9.75
Rumania ...	14.58	Austria ...	10.74	Chile ...	7.72
		Switzerland ...	(b) 9.97		

(a) 1905-9. (b) 1906-10.

The graphs of natural increase for each of the States, as well as for the Commonwealth, are shown on page 132.

3. **Net Immigration.**—The other factor of increase in the population, viz., the excess of arrivals over departures, known as “net immigration,” is, from its nature, much more subject to marked and extensive variation than is the factor of “natural increase.” These variations are due to numerous causes, many of which have already been referred to in dealing with the influences which affect the growth of population. An important cause not yet referred to, is that of assisted immigration. The number of persons so introduced varies considerably in different years.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES

(STATES, TERRITORIES AND COMMONWEALTH), FROM 1861 TO 1912 INCLUSIVE.

States.							Territories.		Cwlth.
Period.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n. (b)	Fed. (c)	
MALES.									
1861 to 1865	2,984	15,871	34,031	10,270	3,213	2,997	...	...	31,630
1866 to 1870	23,381	13,516	10,190	242	1,182	313	...	...	47,714
1871 to 1875	20,346	8,093	26,236	3,833	80	1,916	...	...	40,326
1876 to 1880	48,378	5,696	13,892	25,056	179	2,418	...	...	83,869
1881 to 1885	70,996	19,925	54,867	1,982	2,701	1,860	...	...	148,367
1886 to 1890	29,345	51,894	18,514	12,895	6,411	2,648	...	...	95,917
1891 to 1895	8,671	33,192	5,088	1,493	39,443	2,857	...	...	15,660
1896 to 1900	854	39,805	8,095	8,239	36,953	2,905	...	...	945
1901 to 1905	15,671	37,971	495	11,031	28,127	1,771	697	...	7,177
1906 to 1910	11,157	9,400	12,291	10,590	711	5,784	366	...	37,999
1911 to 1912	47,794	25,610	8,712	4,861	11,625	870	197	77	98,006
1861 to 1912	277,869	20,283	192,411	18,728	130,107	6,677	866	77	591,366

Throughout the minus sign (—) signifies that the number of departures was in excess of arrivals.
(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900. (c) Part of New South Wales prior to 1911.

NET IMMIGRATION, OR EXCESS OF ARRIVALS OVER DEPARTURES
(STATES, TERRITORIES AND COMMONWEALTH), FROM 1861
TO 1912 INCLUSIVE—Continued.

Period.	States.						Territories.		
	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n (b)	Fed- eral. (c)	C'wealth.
FEMALES.									
1861 to 1865	8,578	21,527	18,824	5,993	952	— 1,358	...	...	54,516
1866 to 1870	9,928	16,702	4,851	1,207	517	— 500	...	...	32,705
1871 to 1875	9,395	2,498	11,187	774	— 18	— 2,500	...	...	21,336
1876 to 1880	25,081	— 169	7,792	12,977	130	462	...	...	46,273
1881 to 1885	38,867	7,861	27,526	— 100	957	562	...	...	75,673
1886 to 1890	23,220	34,337	14,811	— 11,310	1,768	— 42	...	...	62,784
1891 to 1895	12,793	— 13,656	— 422	1,964	7,758	— 1,705	...	...	6,732
1896 to 1900	— 143	— 23,777	927	— 7,627	32,043	2,009	...	...	3,432
1901 to 1905	1,566	— 21,984	— 2,398	— 8,448	22,293	— 726	81	...	— 9,616
1906 to 1910	9,390	10	7,780	4,403	1,867	— 4,023	— 148	...	19,279
1911 to 1912	24,140	16,526	6,440	3,599	7,150	— 3,034	45	169	55,035
1861 to 1912	162,815	39,875	97,318	3,432	75,417	— 10,855	22	169	368,149
PERSONS.									
1861 to 1865	11,562	5,656	52,855	16,263	4,165	— 4,355	...	...	86,146
1866 to 1870	33,309	30,218	15,041	965	1,699	— 813	...	...	80,419
1871 to 1875	29,741	— 5,595	37,423	4,607	— 98	— 4,416	...	...	61,662
1876 to 1880	73,459	— 5,865	21,684	38,033	— 49	2,880	...	...	130,142
1881 to 1885	109,863	27,786	82,393	— 2,082	3,658	2,422	...	...	224,040
1886 to 1890	52,565	86,231	33,325	— 24,205	8,179	2,606	...	...	158,701
1891 to 1895	21,464	— 46,848	4,666	471	47,201	— 4,562	...	...	22,392
1896 to 1900	— 997	— 63,582	9,022	— 15,866	68,996	4,914	...	...	2,487
1901 to 1905	17,237	— 59,955	— 1,903	— 19,479	50,420	— 2,497	— 616	...	— 16,793
1906 to 1910	20,547	9,410	20,071	14,993	2,578	— 9,807	— 514	...	57,278
1911 to 1912	71,934	42,136	15,152	8,460	18,775	— 3,904	242	246	153,041
1861 to 1912	440,684	19,592	289,729	22,160	205,524	— 17,532	— 888	246	959,515

Throughout, the minus sign (—) signifies that the number of departures was in excess of arrivals.
(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.
(c) Part of New South Wales prior to 1911.

During the period 1861-1912, viz., 52 years, the gain to the Commonwealth population by excess of arrivals over departures was 959,515 persons, while the gain by excess of births over deaths for the same period was 2,628,259. That is, 26.74 per cent. of the increase for the Commonwealth during the past 52 years has been due to "net immigration" and 73.26 per cent. to "natural increase." In regard to the contribution by individual States to the total net immigration of 959,515, all showed a gain with the exception of Tasmania, which in the period under review had an excess of departures over arrivals of 17,532. In the case of Victoria and South Australia, the gain was small, viz., 19,592 and 22,160 respectively. In New South Wales, Queensland, and Western Australia, on the other hand, the additions due to net immigration during the 52 years were respectively 440,684; 289,729, and 205,524.

The quinquennial period in which the greatest net immigration to the Commonwealth occurred was that of 1881-5 with a total of 224,040, whilst in the period 1901-5, the departures exceeded the arrivals by 16,793. The quinquennial periods

in which maximum net immigration occurred in the several States were as follows:—New South Wales and Queensland 1881-5, Victoria 1886-90, South Australia 1876-80, Western Australia and Tasmania 1896-1900. In all the States quinquennial periods have occurred in which the departures for the five years have exceeded the arrivals. The periods in which such net emigration from the several States was greatest were as follows:—New South Wales and Victoria 1896-1900, Queensland 1901-5, South Australia 1886-90, Western Australia 1871-5 and Tasmania 1906-10. For the first two years (1911 and 1912) of the current quinquennium the gain by immigration has been heavy, the net immigration for the two years being 153,041 or slightly less than the migration gain for the whole of the quinquennium 1886-90.

4. **Net Increase.**—The net increase of the population is found by the combination of the natural increase with the net immigration.

In the following table are set out the figures shewing the net increase in each quinquennium from 1861 onwards, and for the years 1911 and 1912:—

**NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES AND
COMMONWEALTH FROM 1861 to 1912.**

MALES.

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Vict.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North'n (b)	Fed'l. (c)	
1861 to 1865	25,039	18,415	36,475	19,915	3,978	896	...	...	104,718
1866 to 1870	49,231	48,513	15,929	10,639	1,936	2,968	...	...	129,216
1871 to 1875	50,413	27,039	32,940	13,812	630	1,161	...	...	125,995
1876 to 1880	82,418	26,289	21,852	38,732	844	5,890	...	...	176,025
1881 to 1885	113,654	53,539	62,853	14,987	3,703	7,144	...	...	255,880
1886 to 1890	84,098	91,422	36,386	3,624	8,166	8,741	...	...	232,437
1891 to 1895	65,505	12,414	25,613	14,265	40,879	4,032	...	...	162,708
1896 to 1900	47,838	6,160	25,819	4,323	40,355	9,278	...	...	121,453
1901 to 1905	66,850	—3,639	17,123	1,118	36,410	6,184	920	...	123,126
1906 to 1910	75,284	48,348	33,706	25,090	11,473	2,919	630	...	196,190
1911 to 1912	77,684	43,343	18,626	12,056	16,085	2,695	116	105	170,660
1861 to 1912	737,964	359,523	327,322	158,561	164,459	51,908	1,434	105	1,798,408

FEMALES.

1861 to 1865	34,921	61,142	22,390	15,980	2,057	3,250	...	...	139,740
1866 to 1870	40,255	57,621	12,422	12,430	1,818	3,951	...	...	128,497
1871 to 1875	44,962	43,970	20,893	11,718	1,237	1,692	...	...	124,472
1876 to 1880	65,357	37,382	20,083	27,585	1,715	5,161	...	...	157,282
1881 to 1885	89,071	47,694	42,788	17,933	2,695	6,926	...	...	207,107
1886 to 1890	85,310	82,468	39,049	6,010	4,377	7,186	...	...	224,400
1891 to 1895	76,723	39,534	25,335	18,756	11,134	6,076	...	...	177,558
1896 to 1900	56,964	16,697	24,964	5,816	39,097	8,727	...	...	152,265
1901 to 1905	60,729	17,847	20,512	4,253	33,761	7,301	109	...	144,512
1906 to 1910	80,687	42,639	33,828	19,157	15,221	4,499	115	...	195,916
1911 to 1912	57,690	35,810	18,783	11,166	13,212	707	58	190	137,616
1861 to 1912	692,669	482,804	281,047	150,804	126,324	55,476	52	190	1,789,366

(a) Including Northern Territory up to 1900.

(b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

Note.—The minus sign (—) denotes decrease.

NET INCREASE OF THE POPULATION OF THE STATES, TERRITORIES
AND COMMONWEALTH FROM 1861 TO 1912.—Continued.

PERSONS.

Period.	States.						Territories.		Commonwealth.
	N.S.W.	Vic.	Q'land.	S. Aust. (a)	W. Aust.	Tas.	North- ern. (b)	Federal. (c)	
1861 to 1865	59,960	79,557	58,865	35,895	6,035	4,146	...	...	244,458
1866 to 1870	89,486	106,134	28,351	23,069	3,754	6,919	...	...	257,713
1871 to 1875	95,375	71,009	53,833	25,530	1,867	2,853	...	...	250,467
1876 to 1880	147,775	63,671	41,935	66,317	2,559	11,051	...	...	333,308
1881 to 1885	202,725	101,233	105,641	32,920	6,398	14,070	...	...	462,987
1886 to 1890	169,408	173,890	75,435	9,634	12,543	15,927	...	...	456,837
1891 to 1895	142,228	51,948	50,948	33,021	52,013	10,108	...	...	340,266
1896 to 1900	104,802	10,537	50,783	10,139	79,452	18,005	...	...	273,718
1901 to 1905	127,579	14,208	37,635	5,371	70,171	13,485	— 811	...	267,638
1906 to 1910	155,971	90,987	67,534	44,247	26,694	7,418	— 745	...	392,106
1911 to 1912	135,324	79,153	37,409	23,222	29,297	3,402	174	295	308,276
1861 to 1912	1,430,633	842,327	608,369	309,365	290,783	107,384	— 1,382	295	3,587,774

(a) Including Northern Territory up to 1900. (b) Included in South Australia up to 1900.

(c) Part of New South Wales prior to 1911.

Note.—The minus sign (—) denotes decrease.

As regards the Commonwealth as a whole, the greatest increase in any quinquennium was that for the years 1881-5, viz., 462,987. These figures were, however, closely approached in the following quinquennium, viz., 456,837. The rate of increase fell off in succeeding quinquennia, the increase for the years 1901-5 being 267,638. Since then an improvement has set in, and the increases for the years 1911 and 1912, viz., 143,624 in the former year and 164,652 in the latter, are the best yet experienced by the Commonwealth. The previous best for any single year, viz., 117,654, was experienced in the year 1883.

As regards the individual States the maximum increases in any quinquennium are as follows:—New South Wales, 202,725, in 1881-5; Victoria, 173,890, in 1886-90; Queensland, 105,641, in 1881-5; South Australia (including the Northern Territory), 66,317, in 1876-80; Western Australia, 79,452, in 1896-1900; Tasmania, 18,005, in 1896-1900.

As regards the minimum increases, it will be seen that they have occurred as under:—New South Wales, 59,960, in 1861-5; Victoria, 10,537, in 1896-1900; Queensland, 28,351, in 1866-70; South Australia, 5371, in 1901-5; Western Australia, 1867, in 1871-5; Tasmania, 2853, in 1871-5.

For the years 1911 and 1912 all the States show a satisfactory rate of increase. As regards the Northern Territory, the figures show a gain of population for that period, being the first time since federation.

The graphs shewing net increase, both for the Commonwealth as a whole and for each of the States, will be found on pages 180 and 181.

5. Total Increase.—(i.) *Rates for various Countries.* The table hereunder furnishes particulars concerning rates of increase in population for the Commonwealth, its component States, and other countries:—

RATES OF INCREASE IN POPULATION, 1881 to 1912 (VARIOUS COUNTRIES).

Countries.	Mean Annual Rate of Increase in Population during period—						
	1881 to 1886.	1886 to 1891.	1891 to 1896.	1896 to 1901.	1901 to 1906.	1906 to 1911.	1911 to 1912.
	%	%	%	%	%	%	%
AUSTRALASIA—							
Commonwealth ...	3.86	3.06	1.86	1.49	1.33	2.03	3.44
New South Wales ...	4.83	3.23	1.99	1.57	1.99	2.03	4.50
Victoria ...	2.60	3.12	0.37	0.52	0.18	2.17	2.73
Queensland ...	8.42	3.80	2.49	2.25	1.35	2.76	2.80
South Australia ...	1.41	1.15	1.63	0.77	0.27	2.46	2.52
Western Australia ...	6.13	5.54	20.81	7.25	6.22	2.43	5.10
Tasmania ...	2.18	2.87	1.06	1.83	1.33	0.65	0.72
New Zealand ...	3.31	1.47	2.41	1.98	2.86	2.56	2.38
EUROPE—							
England and Wales ...	1.11	1.11	1.15	1.15	1.04	1.04	...
Scotland ...	0.75	0.75	1.06	1.06	0.55	0.55	...
Ireland ...	—0.95	—0.94	—0.60	—0.43	—0.22	—0.06	...
Austria ...	0.73	0.83	0.79	1.05	0.87	0.86	...
Belgium ...	1.13	0.75	1.15	0.92	1.26	0.69	...
Denmark ...	1.05	0.87	0.99	1.32	1.12	1.26	...
Finland ...	1.42	1.51	1.20	1.41	1.36	1.43	...
France ...	0.34	0.06	0.09	0.24	0.15	0.16	...
German Empire ...	0.74	1.09	1.17	1.51	1.46	1.36	...
Hungary ...	1.09	1.01	0.92	1.03	0.77	0.84	...
Italy ...	0.66	0.71	0.68	0.61	0.52	0.80	...
Netherlands ...	1.32	1.03	1.28	1.30	1.53	1.22	...
Norway ...	0.36	0.54	0.96	1.31	0.52	0.66	...
Prussia ...	0.79	1.15	1.29	1.59	1.57	1.48	...
Rumania ...	1.77	1.34	1.15	1.41	1.46	1.48	...
Servia ...	2.30	2.08	1.37	1.57	1.52	1.55	...
Spain ...	0.54	0.48	0.45	0.45	0.52	0.87	...
Sweden ...	0.57	0.40	0.61	0.86	0.61	0.84	...
Switzerland ...	0.88	0.40	1.22	1.10	1.28	(a) 1.21	...
ASIA—							
Ceylon ...	0.54	1.35	1.41	2.03	1.62	1.20	...
Japan ...	0.96	1.12	0.96	1.25	1.29	1.08	...
AMERICA—							
Canada ...	1.10	1.08	0.97	1.19	2.98	2.98	...
Chile ...	2.97	0.72	2.66	0.90	1.53	1.56	...
Jamaica ...	0.77	1.37	1.66	1.72	1.63	0.28	...
United States ...	2.27	2.15	1.93	2.02	2.00	1.82	...

— Decrease. (a) 1906 to 1910.

(ii.) *Variations in the Commonwealth Rate.* During the thirty-one years 1881-1912, the annual rate of increase in the population of the Commonwealth has exhibited a marked decline, falling from an average of 3.86 per cent. for the five years 1881-6 to an average of 1.38 for 1901-6. During the succeeding quinquennium, however, an improvement took place, the rate of increase being 2.03 per cent. As regards the separate States of the Commonwealth, the rates of increase in all cases except that of South Australia were lower, and in most instances considerably lower, for the period 1906-11 than for 1881-6.

(iii.) *Comparison of Rates of Increase.* It may be noted that the highest rates of increase for the period 1906-11 are those for Canada, New Zealand, and the Commonwealth of Australia in the order named. The United States, Chile and Servia rank next order.

6. **Density of Population.**—From one aspect population may be less significant in respect of its absolute amount than in respect of the density of its distribution. The Commonwealth of Australia, with an area of 2,974,581 square miles, and a population on 31st December, 1912, of 4,833,359 including aborigines, has a density of only 1.62 persons to the square mile, and is therefore the most sparsely populated of the civilised countries of the world. For the other continents the densities are approximately as follows:—Europe, 118; Asia, 58; Africa, 12; North and Central America, 15; and South America, 7. The population of the Commonwealth has thus about 10 $\frac{5}{8}$ per cent. of the density of that of North and Central America, about 23 per cent. of South America, about 13 $\frac{1}{2}$ per cent. of that of Africa, about 2 $\frac{3}{4}$ per cent. of that of Asia, and about 1 $\frac{1}{2}$ per cent. of that of Europe.

Particulars concerning the number and density of the population of the various countries of the world for the latest dates for which such information is available are given in the following table. These figures have in the main been derived from the 1913 issue of the "Statesman's Year Book," and in some instances, more particularly in the case of Africa, must be considered as rough approximations only, complete data not being obtainable:—

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS COUNTRIES OF THE WORLD.

Country.	Population.		Country.	Population.	
	Number.	Density (a)		Number.	Density (a)
Continents—			Asia—		
Europe	455,620,574	118.15	China & Dependencies ...	433,553,030	101.36
Asia	970,547,713	57.66	British India	244,267,542	232.49
Africa	136,330,966	12.12	Federatory Indian States	70,864,995	102.52
North & Central America			Japan & Dep. (incl. Korea)	69,689,284	267.09
and the West Indies ...	127,560,361	14.93	Dutch East Indies ...	37,800,000	64.66
South America	53,054,681	7.04	Russia in Asia	25,644,500	3.86
Australasia & Polynesia	7,869,938	2.27	Turkey in Asia	21,053,400	49.02
			Persia	9,500,000	15.13
			Philippine Islands ...	8,368,427	65.45
Total	1,750,984,233	34.02	Siam	8,117,953	41.63
			Tonking	6,119,720	131.89
Europe—			Afghanistan	5,900,000	23.60
Russia (including Poland			Annam	5,554,822	106.82
Ciscaucasia & Finland) ...	141,358,500	66.58	Nepal	5,000,000	92.59
German Empire	64,925,993	310.98	Ceylon	4,105,535	162.07
Austria - Hungary (incl.			Cochin China	3,050,785	152.54
Bosnia & Herzegovina) ...	51,356,465	196.73	Arabia (Independent) ...	2,000,000	2.07
United Kingdom	45,652,741	376.10	Cambodia	1,634,252	36.32
France	39,601,509	191.26	Bokhara	1,250,000	15.06
Italy	34,671,377	313.32	Federated Malay States	1,036,999	37.70
Spain	19,588,688	100.57	Khiva	800,000	33.33
Belgium	7,490,411	658.61	Borneo and Sarawak ...	708,183	9.69
Rumania	7,248,061	142.90	Straits Settlements ...	707,523	442.20
Turkey (including Crete)	6,472,351	94.19	Laos	640,877	6.54
Netherlands	6,022,452	476.16	Oman	500,000	6.10
Portugal	5,957,985	167.88	Goa	475,513	323.70
Sweden	5,561,799	32.17	Hong Kong & Territory	463,715	1,144.98
Bulgaria & E. Roumelia ...	4,337,516	128.91	Timor, etc.	300,000	40.93
Switzerland	3,741,971	234.22	French India	282,386	1,440.74
Servia	2,911,701	156.12	Cyprus	274,108	76.48
Denmark (incl. Iceland)	2,860,264	51.64	Bhutan	250,000	12.50
Greece	2,666,000	106.58	Kiauchau	165,000	825.00
Norway	2,391,782	19.27	Wei-hai-wei	147,177	516.41
Luxemburg	259,891	260.41	Bahrein Islands	90,000	360.00
Montenegro	250,000	88.87	Macao, etc.	63,991	15,997.75
Malta	228,534	1,936.73	Damao and Diu	56,285	333.05
Gibraltar	19,586	9,793.00	Aden & Dependencies ...	46,165	5.13
Monaco	19,121	2,390.13	Brunei	30,000	7.50
San Marino	10,791	283.97	Tientsin	17,000	944.44
Liechtenstein	9,854	151.60	Sokotra & Kuria Muria Is.	12,000	8.68
Andorra	5,231	29.89	Labuan	6,546	235.72
Total	455,620,574	118.15	Total	970,547,713	57.66

(a) Number of persons per square mile.

NUMBER AND DENSITY OF THE POPULATION OF THE VARIOUS
COUNTRIES OF THE WORLD.—Continued.

Country.	Population.		Country.	Population.	
	Number.	Density (a)		Number.	Density (a)
Africa—			Porto Rico	1,118,012	310.04
Belgian Congo	15,000,000	16.49	Jamaica	831,383	197.95
Turkish Dependencies (incl. Egypt & Sudan) ...	14,287,359	10.32	San Domingo	708,000	36.64
German East Africa	10,004,227	26.05	Nicaragua	600,000	12.20
French Congo	10,000,000	14.95	Honduras	553,446	11.97
Northern Nigeria Prot. ...	9,269,000	36.25	Costa Rica	388,266	16.88
Abyssinia	8,000,000	18.50	Trinidad and Tobago ...	330,074	176.70
Southern Nigeria & Prot. ...	7,857,399	98.37	Newfound'd & Labrador ...	242,619	1.49
Union of South Africa ...	5,973,394	12.63	Guadeloupe and Depend. ...	212,430	308.75
Algeria	5,563,828	16.20	Martinique	184,004	477.93
Morocco	5,000,000	22.83	Barbados	171,982	1,036.04
Upper Senegal and Niger ...	4,471,031	62.10	Windward Islands	164,150	311.48
Angola	4,119,000	8.50	Leeward Islands	127,189	181.44
British East Africa Prot. ...	4,038,000	16.15	Alaska	64,356	0.11
Portuguese East Africa ...	3,120,000	10.63	Bahamas	55,944	12.71
Madagascar & adjacent Islands	3,104,881	13.62	Curacao	54,469	135.16
Uganda Protectorate	2,843,325	12.72	British Honduras	40,458	4.71
Kamerun	2,720,000	14.23	Danish West Indies	27,066	196.28
Tunis	1,923,217	38.46	Bermudas	18,994	999.68
Liberia	1,800,000	45.00	Greenland	13,517	0.29
Rhodesia	1,770,905	4.04	Turks & Caicos Islands... ..	5,615	33.83
Gold Coast and Protect. ...	1,502,899	18.79	St. Pierre & Miquelon ...	4,652	50.02
French Guinea	1,498,000	15.77			
Sierra Leone and Protect. ...	1,403,132	56.32	Total	127,560,361	14.93
Senegal	1,172,096	15.84			
Ivory Coast	1,132,812	8.71	South America—		
Nyasaland Protectorate ...	1,001,236	25.16	Brazil	23,140,969	6.88
Togoland	1,000,363	29.68	Argentine Republic	7,171,910	6.22
Dahomey	825,950	12.71	Colombia	5,475,961	11.86
Portuguese Guinea	820,000	58.82	Peru	4,500,000	6.47
French Sahara	800,000	0.52	Chile	3,415,060	11.67
Tripoli and Benghazi	528,676	1.30	Venezuela	2,743,841	6.96
Eritrea	450,000	9.83	Bolivia	2,267,935	3.73
Basutoland	405,903	34.65	Ecuador	1,500,000	12.93
Italian Somaliland	400,000	2.87	Uruguay	1,177,560	16.31
Mauritius and Depend. ...	375,481	461.13	Paraguay	800,000	4.66
British Somaliland	300,000	4.41	Panama	426,928	13.18
Mauretania	223,000	0.65	British Guiana	296,000	3.28
French Somali Coast, etc. ...	208,000	35.92	Dutch Guiana	86,233	1.87
Rio Muni & C. San Juan... ..	200,000	16.67	French Guiana	49,009	1.61
Zanzibar	198,914	195.01	Falkland Islands and South Georgia	3,275	0.44
Réunion	173,822	179.20			
Cape Verde Islands	142,552	96.32	Total	53,054,681	7.04
Gambia & Protectorate ...	138,400	30.76			
Bechuanaland Protect. ...	125,350	0.46	Australasia & Polynesia—		
Swaziland	99,959	15.29	Commonwealth of Australia ...	(b) 4,833,359	1.62
Comoro Islands... ..	94,844	152.97	New Zealand	(c) 1,096,881	10.47
German S. W. Africa	82,235	0.26	Kaiser Wilhelm Land & Bismarck Archipelago ...	730,593	8.01
Spanish N. & W. Africa ...	44,134	538.22	Papua	272,057	3.00
Prince's & St. Thomas Is. ...	42,103	116.95	Dutch New Guinea	200,000	1.32
Seychelles	26,000	162.50	Hawaii	191,909	29.76
Fernando Po, etc.	23,844	20.29	Solomon Islands (British) ...	150,500	10.17
Rio de Oro and Adrar	12,000	0.16	Fiji	139,541	18.77
Mayotte	9,989	71.35	New Caledonia & Depend. ...	57,208	6.69
St. Helena	3,520	74.89	New Hebrides	50,000	10.00
Ascension	186	5.47	Samoa (German)	34,480	34.48
			French Estab. in Oceania ...	31,477	20.71
Total	136,330,966	12.12	Gilbert Islands	26,863	161.83
			Tonga	23,737	60.86
North & Central America & West Indies—			German Solomon Is., etc. ...	20,600	3.99
United States	91,972,266	30.93	Guam	12,517	59.60
Mexico	15,063,207	19.64	Samoa (American)	7,249	91.76
Canada	7,204,838	1.93	Norfolk Island	967	96.70
Cuba	2,220,278	50.27			
Haiti	2,029,700	198.91	Total	7,869,938	2.27
Guatemala	1,992,000	41.25			
Salvador	1,161,426	160.75			

(a) Number of persons per square mile. (b) Inclusive of an allowance of 100,000 for Aboriginal Natives. (c) Inclusive of Maoris and population of Cook and other Pacific Islands.

§ 5. Seasonal Variations of Population.

1. **Natural Increase.**—For the Commonwealth as a whole the natural increase of the population was greatest in the quarter ending 30th September, and least in that ending 31st March. The birth rate is usually at its highest, and the death rate at its lowest, in the September quarter, and *vice versa* in the March quarter. The average natural increase in population of the several States for each of the quarters, based upon the experience of the ten years 1903 to 1912, is given in the following table, from which it will be seen that the quarter in which the rate of natural increase was highest in that ended 30th June for Victoria and Queensland, that ended 30th September for New South Wales and Western Australia, that ended 31st December for Tasmania, while for South Australia the rate for the quarters ending 30th June and 30th September was almost identical. The rate of natural increase was lowest in the quarter ended 31st March in all the States except Western Australia, in which the lowest rate occurred in the quarter ended 31st December.

AVERAGE QUARTERLY NATURAL INCREASE, STATES AND COMMONWEALTH, 1903 to 1912.

State.	(a) Average Natural Increase for Quarter ended on last day of—								Average Natural In- crease per annum, 1903-12.	
	March.		June.		September.		December.			
	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo	Persons	o/oo
New S. Wales (b)	6,304	4.10	8,511	4.20	6,914	4.44	6,887	4.39	26,616	17.29
Victoria ...	3,814	3.06	4,190	3.36	4,168	3.33	4,165	3.32	16,337	13.12
Queensland ...	2,121	3.84	2,414	4.35	2,420	4.30	2,340	4.14	9,295	16.82
S. Australia (c)	1,308	3.43	1,555	4.07	1,568	4.09	1,438	3.74	5,869	15.37
W. Australia ...	1,105	4.36	1,171	4.57	1,383	5.33	1,119	4.27	4,778	18.87
Tasmania ...	790	4.20	822	4.39	889	4.52	972	5.22	3,423	18.19
Commonwealth	15,442	3.71	16,663	3.99	17,292	4.12	16,921	4.01	66,318	15.94

(a) The symbol ‰ denotes "per thousand." (b) Including Federal Territory.
(c) Including Northern Territory.

2. **Net Immigration.**—For the Commonwealth as a whole the excess of arrivals over departures for the years 1903 to 1912 was greatest in the December quarter. In New South Wales the September quarter gave the greatest excess of arrivals over departures. In Western Australia the largest excess was in the June quarter. In Tasmania the arrivals largely exceeded the departures in the December quarter, but in all the other quarters the departures were in excess. In Queensland, the December quarter shewed an excess of departures over arrivals. In Victoria and South Australia the arrivals were greatest in the December quarter, and the departures exceeded the arrivals in the first two quarters. Particulars concerning the average net immigration of the several States are as follows:—

AVERAGE QUARTERLY NET IMMIGRATION, STATES AND COMMONWEALTH, 1903 to 1912.

State.	Quarter ended on last day of—								Average Net Immigration per annum, 1903-12.	
	March.		June.		September.		December.		Persons	‰
	Persons	‰	Persons	‰	Persons	‰	Persons	‰		
N.S.W. <i>a</i>	2,829	1.84	2,213	1.43	3,642	2.34	2,453	1.56	11,137	7.23
Victoria	— 824	—0.66	—2,304	—1.85	602	0.48	3,422	2.73	896	0.72
Q'land	634	1.15	4,285	7.71	936	1.66	—2,731	—4.83	3,124	5.65
S. Aust. <i>b</i>	— 892	—2.34	— 746	—1.95	297	0.77	2,680	6.96	1,339	3.51
W. Aust.	1,776	7.01	2,421	9.45	1,124	4.33	— 684	—2.61	4,637	18.31
Tas. ...	—1,847	—9.82	—2,318	—12.40	— 444	—2.39	2,962	15.93	—1,647	—8.76
C'wealth	1,676	0.40	3,551	0.85	6,157	1.47	8,102	1.92	19,486	4.68

Throughout, the minus sign (—) denotes that the departures were in excess of arrivals, and ‰ denotes per thousand of population.

(a) Including Federal Territory. (b) Including Northern Territory.

§ 6. Urban Population.

1. **The Metropolitan Towns.**—A feature of the distribution of population in Australia is the tendency to accumulate in the capital cities. To such an extent is this metropolitan aggregation carried, that in every State the population of the capital far outnumbers that of any other town therein, and ranges between 20 and 46 per cent. of the entire population of the State. The estimated populations of the several capitals on 31st December, 1912, and the percentages of such populations on the totals for the respective States, are shewn in the table hereunder. That this metropolitan concentration is phenomenal, may be readily seen by comparing the percentage on the total population with the similar figures for the principal countries of Europe, also given in the table hereunder:—

METROPOLITAN POPULATION.

(VARIOUS COUNTRIES.)

State or Country.	Metropolis.	Year.	Population.	Percentage on total of State or Country.
				%
New South Wales	Sydney	31st Dec., 1912.	698,800	39.27
Victoria	Melbourne		628,400	45.52
Queensland	Brisbane		145,000	22.79
South Australia... ..	Adelaide		196,600	45.34
Western Australia	Perth		116,000	37.90
Tasmania	Hobart		39,100	19.83
Commonwealth	(6 Cities	1911	1,823,900	38.53
New Zealand	Wellington		70,729	6.90
Denmark... ..	Copenhagen	1911	559,398	20.29
England	London (a)	1911	4,521,685	12.54
Saxony	Dresden	1910	548,308	11.41
Norway	Christiania	1910	241,834	10.11
Ireland	Dublin	1911	403,030	9.18
Bavaria	Munich	1910	596,467	8.66
Belgium	Brussels	1911	646,400	8.63
France	Paris	1911	2,888,110	7.29
Austria	Vienna	1910	2,031,498	7.11
Scotland	Edinburgh	1911	320,318	6.73
Portugal	Lisbon... ..	1900	356,009	6.56
Greece	Athens	1907	167,479	6.36
Sweden	Stockholm	1911	346,599	6.23
Prussia	Berlin	1910	2,071,257	5.16
Netherlands	The Hague	1911	288,577	4.79
Hungary	Budapest	1910	880,371	4.22
Spain	Madrid	1910	571,539	2.92
Switzerland	Berne	1910	85,264	2.28
Russia (European)	St. Petersburg	1911	1,962,400	1.63
Italy	Rome	1911	542,123	1.56

(a) Population of Greater London 1911, 7,251,358.

2. **Urban Population Generally.**—In connection with the particulars shewing the tendency in Australia to concentrate population in the metropolis, it should be borne in mind that in most of the European States the capital is but one of many populous cities, and in some instances is by no means the most populous. In Australia, on the other hand, the metropolis is in every instance the most populous city, and, in some of the States, is also the only town of considerable magnitude.

In the following table will be found particulars of all localities in the Commonwealth returned at the date of the Census, on 3rd April, 1911, as having a population of over 3000. From this it will be seen that there were, in all, 29 localities in the Commonwealth returned as having a population upwards of 20,000. Of these 11 were in New South Wales, 13 in Victoria, 1 in Queensland, 1 in South Australia, 1 in Western Australia and 2 in Tasmania.

The figures given in this table relate to the localities specified as defined by the residents therein. It must be understood that no clearly defined boundaries exist in these cases, and the population given for any locality represents the number of persons who returned themselves as belonging to that locality. For the population within the boundaries of the principal Local Government Areas in the States, reference should be made to paragraph 3 below.

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH, 3rd APRIL, 1911.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
100,000 and over—			10,000 and under 20,000—cont.		
Sydney	N.S.W.	107,133	Toowoomba	Qld.	16,160
20,000 and under 100,000—			Townsville	N.S.W.	13,678
Adelaide	S.A.	32,981	Waverley	N.S.W.	18,961
Ballarat	Vic.	38,686	Williamstown	Vic.	12,114
Balmain	N.S.W.	31,961	Woolahra	N.S.W.	12,816
Brisbane South	Qld.	21,332	5000 and under 10,000—		
Broken Hill	N.S.W.	30,953	Abbotsford	Vic.	9,308
Brunswick	Vic.	32,201	Adelaide North	S.A.	9,300
Carlton	"	27,476	Albury	N.S.W.	5,862
Collingwood	"	20,254	Alexandria	"	9,491
Fitzroy	"	34,141	Ararat	Vic.	5,402
Footscray	"	21,933	Armidale	N.S.W.	5,530
Geelong	"	21,630	Arncliffe	"	5,034
Glebe	N.S.W.	21,444	Ascot Vale	Vic.	5,655
Hawthorn	Vic.	24,353	Auburn	N.S.W.	5,602
Hobart	Tas.	27,505	Bathurst	"	9,219
Launceston	"	20,937	Bexley	"	6,241
Leichhardt	N.S.W.	24,139	Bundaberg	Qld.	8,727
Marrickville	"	25,993	Burwood	N.S.W.	8,281
Melbourne	Vic.	38,293	Cairns	Qld.	5,193
Melbourne South	"	46,016	Camberwell	Vic.	8,547
Newtown	N.S.W.	26,427	Castlemaine	"	5,219
Paddington	"	24,150	Caulfield	"	7,669
Perth	W.A.	31,300	Chatswood	N.S.W.	5,482
Petersham	N.S.W.	20,407	Claremont	W.A.	6,252
Prahran	Vic.	25,489	Coburg	Vic.	9,454
Redfern	N.S.W.	24,275	Cottesloe	W.A.	5,142
Richmond	Vic.	38,559	Drummoyne	N.S.W.	5,947
St. Kilda	"	25,449	Dubbo	"	5,368
Sydney North	N.S.W.	32,764	Eaglehawk	Vic.	6,998
10,000 and under 20,000—			Elsternwick	"	6,790
Annandale	N.S.W.	11,250	Erskineville	N.S.W.	7,234
Ashfield	"	12,096	Flemington	Vic.	6,109
Bendigo	Vic.	17,883	Fortitude Valley	Qld.	7,090
Botany	N.S.W.	10,228	Fremantle	W.A.	6,406
Boulder	W.A.	12,833	Fremantle South	"	6,253
Brighton	Vic.	11,096	Glenelg	S.A.	5,003
Brisbane	Qld.	17,715	Grafton and Grafton South	N.S.W.	6,123
Charters Towers	"	15,037	Granville	"	6,938
Essendon	Vic.	10,067	Hamilton	"	6,944
Goulburn	N.S.W.	10,187	"	Vic.	5,551
Gympie	Qld.	11,718	Hurstville	N.S.W.	5,112
Ipswich	"	10,445	Inverell	"	5,131
Kalgoorlie	W.A.	13,488	Kensington	Vic.	7,341
Kew	Vic.	11,143	Kogarah	N.S.W.	6,300
Malvern	"	15,319	Leederville	W.A.	5,499
Manly	N.S.W.	10,687	Lismore	N.S.W.	7,609
Melbourne North	Vic.	17,750	Lithgow	"	6,991
Mosman	N.S.W.	13,189	Mackay	Qld.	6,135
Newcastle	"	12,816	Maitland West	N.S.W.	7,395
Northcote	Vic.	17,491	Maryborough	Qld.	9,410
Parramatta	N.S.W.	12,520	"	Vic.	5,804
Port Melbourne	Vic.	13,471	Moonee Ponds	"	8,065
Randwick	N.S.W.	15,793	Mount Morgan	Qld.	9,772
Rockhampton	Qld.	15,451	New Farm	"	5,394
South Yarra	Vic.	10,060	Newtown	Vic.	5,863
			Norwood	S.A.	9,454

POPULATION OF PRINCIPAL TOWNS IN THE COMMONWEALTH,
3RD APRIL, 1911—Continued.

Town.	State in which Situated.	Approx. Population.	Town.	State in which Situated.	Approx. Population.
5000 and under 10,000—cont.			3000 and under 5000—cont.		
Orange ...	N.S.W.	5,263	Gunnedah ...	N.S.W.	4,100
Paddington ...	Qld.	5,273	Hamilton ...	Qld.	3,229
Parkside ...	S.A.	7,774	Hindmarsh ...	S.A.	3,556
Port Pirie ...	"	7,968	Horsham ...	Vic.	3,554
Preston ...	Vic.	5,025	Ithaca ...	Qld.	3,278
Rockdale ...	N.S.W.	7,453	Junee ...	N.S.W.	3,606
Rookwood ...	"	5,374	Kangaroo Point ...	Qld.	4,417
St. Peters ...	"	7,037 ^a	Katoomba ...	N.S.W.	3,950
Subiaco ...	W.A.	8,701	Kensington ...	S.A.	4,175
Tamworth ...	N.S.W.	7,607	Kuri-Kuri ...	N.S.W.	4,154
Toowoong ...	Qld.	5,645	Kyneton ...	Vic.	3,174
Wagga Wagga ...	N.S.W.	7,446	Liverpool ...	N.S.W.	3,061
Walleroo ...	S.A.	5,282	Maldon ...	Vic.	3,077
Warrnambool ...	Vic.	7,543	Merewether ...	N.S.W.	4,135
Warwick ...	Qld.	5,562	Midland Junction ...	W.A.	3,881
Waterloo ...	N.S.W.	9,471	Mildura ...	Vic.	4,608
Woolloongabba ...	Qld.	8,326	Moonta ...	S.A.	3,772
3000 and under 5000—			Moree ...	N.S.W.	3,161
Albany ...	W.A.	3,699	Mount Gambier ...	S.A.	4,631
Armada ...	Vic.	4,298	Mudgee ...	N.S.W.	3,621
Bairnsdale ...	"	3,412	Narrabri ...	"	4,686
Beechworth ...	"	3,409	Newtown ...	Tas.	3,382
Benalla ...	"	3,172	Northam ...	W.A.	4,205
Bunbury ...	W.A.	3,920	Oakleigh ...	Vic.	3,841
Camperdown ...	N.S.W.	4,768	Parke ...	N.S.W.	3,411
" ...	Vic.	3,473	Perth North ...	W.A.	4,895
Campsie ...	N.S.W.	3,957	Perth West ...	"	3,291
Canterbury ...	"	4,190	Port Adelaide ...	S.A.	3,286
Casino ...	"	3,635	Prospect ...	"	3,998
Cessnock ...	"	3,957	Queenstown ...	Tas.	3,659
Clifton Hill ...	Vic.	4,023	Roma ...	Qld.	3,157
Cobar ...	N.S.W.	4,619	Ryde ...	N.S.W.	3,247
Colac ...	Vic.	3,992	St. Arnaud ...	Vic.	4,096
Concord ...	N.S.W.	3,799	Sale ...	"	3,491
Coonamble ...	"	3,280	Semaphore ...	S.A.	3,495
Cootamundra ...	"	3,352	Shepparton ...	Vic.	4,049
Cowra ...	"	3,981	Singleton ...	N.S.W.	3,655
Darlington ...	"	3,815	Stawell ...	Vic.	4,843
Daylesford ...	Vic.	3,928	Strathfield ...	N.S.W.	3,093
Devonport ...	Tas.	3,620	Summer Hill ...	"	3,854
Dulwich Hill ...	N.S.W.	3,578	Temora ...	"	3,561
Echuca ...	Vic.	4,137	Toorak ...	Vic.	3,630
Enfield ...	N.S.W.	3,475	Unley ...	S.A.	4,397
Forbes ...	"	4,654	Wangaratta ...	Vic.	4,136
Fremantle East ...	W.A.	3,856	Wellington ...	N.S.W.	3,597
" North ...	"	3,315	Willoughby ...	"	4,409
Gawler ...	S.A.	4,037	Windsor ...	Vic.	4,693
Geraldton ...	W.A.	3,494	Wollongong ...	N.S.W.	3,953
Glen Innes ...	N.S.W.	4,030	Wonthaggi ...	Vic.	4,725
Goodwood ...	S.A.	3,443	Wyalong ...	N.S.W.	3,223
Grenfell ...	N.S.W.	3,007	Young ...	"	3,501
Guildford ...	W.A.	3,224	Zeehan ...	Tas.	3,619
					3,951

3. **Municipal Population.**—In the following table the population of the Local Government Areas in the several States will be found set out. It includes only those areas having upwards of 5000 in population.

By the term "Local Government Areas" is meant those districts which have been incorporated for Municipal purposes, and are variously known in the several States as Cities, Towns, Boroughs, Shires, Municipalities, Corporations, District Councils and Road Districts.

**POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE
COMMONWEALTH, 3rd APRIL, 1911.**

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
100,000 and upwards—			5000 and under 10,000—		
Sydney	N.S.W.	112,921	Alberton	Vic.	5,479
Melbourne	Vic.	103,593	Albury	N.S.W.	6,309
20,000 and under 100,000—			Ararat (Shire)	Vic.	6,335
Adelaide	S.A.	42,294	Auburn	N.S.W.	5,559
Ashfield	N.S.W.	30,431	Bairnsdale	Vic.	8,190
Ballarat (City)	Vic.	22,017	Bathurst	N.S.W.	8,575
Balmain	N.S.W.	32,038	Beechworth	Vic.	5,978
Bendigo	Vic.	28,539	Bellingen	N.S.W.	9,124
Brisbane	Qld.	39,917	Benalla	Vic.	7,688
Brisbane, South	"	30,051	Berwick	"	6,632
Broken Hill	N.S.W.	30,972	Bexley	N.S.W.	6,517
Brunswick	Vic.	32,215	Bland	"	5,522
Cessnock	N.S.W.	21,018	Blaxland	"	9,661
Collingwood	Vic.	34,190	Blue Mountains	"	6,902
Essendon	"	33,749	Boree	"	5,111
Fitzroy	"	34,283	Borung	"	5,412
Footscray	"	23,643	Botany, North	N.S.W.	5,836
Glebe	N.S.W.	21,043	Bright	Vic.	5,943
Hawthorn	Vic.	24,450	Bundaberg	Qld.	5,516
Hobart	Tas.	27,526	Buninyong (Shire)	Vic.	5,594
Launceston	"	20,754	Burnside	S.A.	9,416
Leichhardt	N.S.W.	24,254	Burwood	N.S.W.	9,380
Marrickville	"	30,653	Byron	"	6,553
Melbourne, South	Vic.	46,190	Caboolture	Qld.	5,759
Newtown	N.S.W.	26,498	Cairns (Town)	"	5,164
Paddington	"	24,317	Canoblas	N.S.W.	5,140
Perth (Municipality)	W.A.	35,767	Castlemaine	Vic.	5,228
Petersham	N.S.W.	21,712	Clifton	Qld.	7,099
Port Adelaide	S.A.	24,015	Coburg	Vic.	9,505
Prahran	Vic.	45,367	Coolamon	N.S.W.	5,600
Redfern	N.S.W.	24,427	Crookwell	"	6,223
Richmond	Vic.	40,442	Dandenong	Vic.	5,134
St. Kilda	"	25,334	Deloraine	Tas.	5,779
Sydney, North	N.S.W.	34,646	Dimboola	Vic.	5,796
Unley	S.A.	23,773	Dorriga	N.S.W.	7,964
10,000 and under 20,000—			Drummoyn	"	6,678
Alexandria	N.S.W.	10,123	Eaglehawk	Vic.	7,588
Annandale	"	11,240	Erina	N.S.W.	9,176
Ballarat, East	Vic.	15,962	Erskineville	"	7,299
Boulder	W.A.	10,824	Esak	Qld.	5,375
Brighton	Vic.	12,083	Euroa	Vic.	5,130
Bull	N.S.W.	10,123	Glengallan	Qld.	5,982
Canberwell	Vic.	12,551	Gobang	N.S.W.	5,382
Canterbury	N.S.W.	11,335	Goolman	Qld.	5,289
Caulfield	Vic.	15,919	Granville	N.S.W.	7,231
Colac	"	14,212	Guyra	"	6,534
Fremantle (Municipality)	W.A.	14,499	Gympie	Qld.	8,923
Geelong	Vic.	13,618	Hamilton	N.S.W.	7,908
Goulburn	N.S.W.	10,023	Hampden	Vic.	9,829
Hindmarsh	S.A.	11,335	Hastings	N.S.W.	5,746
Ithaca	Qld.	15,756	Heidelberg	Vic.	8,610
Kalgoorlie (Road District)	W.A.	12,061	Highfields	Qld.	6,656
Kensington and Norwood	S.A.	13,892	Hornsby	N.S.W.	8,901
Kew	Vic.	11,152	Hunter's Hill	"	5,013
Lake Macquarie	N.S.W.	14,610	Hurstville	"	6,533
Malvern	Vic.	15,969	Illawarra, Central	"	5,000
Manly	N.S.W.	10,465	Illawarra, North	"	5,157
Manning	"	11,137	Imlay	"	5,564
Moorabbin	Vic.	12,757	Ipswich	Qld.	9,628
Mosman	N.S.W.	13,243	Jondaryan	"	7,469
Newcastle	Vic.	17,519	Kadina (District Council)	S.A.	8,006
Northcote	N.S.W.	12,465	Kalgoorlie (Municipality)	W.A.	8,781
Parramatta	Vic.	13,515	Karkaroo	Vic.	5,743
Port Melbourne	Vic.	14,277	Kentish	Tas.	5,571
Queenton	Qld.	19,463	Kerang	Vic.	8,969
Randwick	N.S.W.	14,095	Kogarah	N.S.W.	6,953
Rockdale	"	15,456	Korong	Vic.	5,517
Rockhampton	Qld.	13,119	Ku-ring-gai	N.S.W.	9,458
Toowoomba	"	10,636	Kyneton	Vic.	6,904
Townsville	"	10,072	Leederville	W.A.	5,457
Waterloo	N.S.W.	19,831	Leven	Tas.	5,450
Waverley	"	15,275	Lilydale	Vic.	6,329
Williamstown	Vic.	13,036	Lismore	N.S.W.	7,381
Willoughby	N.S.W.	16,989	Lithgow	"	8,196
Woollahra	"	"	Liverpool Plains	"	5,651

POPULATION OF PRINCIPAL LOCAL GOVERNMENT AREAS IN THE
COMMONWEALTH, 3rd APRIL, 1911.—Continued.

Local Government Area.	State in which Situated.	Approx. Population.	Local Government Area.	State in which Situated.	Approx. Population.
5000 and under 10,000— <i>cont.</i>			5000 and under 10,000— <i>cont.</i>		
Livingstone ...	Qld.	5,656	St Peters ...	N.S.W.	8,410
Lyndhurst ...	N.S.W.	6,740	... ..	S.A.	9,073
Mackay ...	Qld.	5,141	Severn ...	N.S.W.	6,885
Macleay ...	N.S.W.	6,679	Shepparton ...	Vic.	6,099
Maitland, West ...	Qld.	8,210	Stephens ...	Qld.	5,415
Marong ...	Vic.	6,646	Stroud ...	N.S.W.	5,117
Maroochy ...	Qld.	5,288	Subiaco ...	W.A.	8,926
Maryborough ...	Vic.	5,675	Swan Hill ...	Vic.	6,795
Mildura ...	Qld.	9,673	Tamworth ...	N.S.W.	7,145
Mitcham ...	Vic.	6,119	Tarampa ...	Qld.	6,699
Mount Morgan ...	S.A.	5,035	Tarro ...	N.S.W.	6,492
Mulwara ...	Qld.	8,504	Tenterfield (Shire) ...	"	5,153
Namoi ...	N.S.W.	7,009	Terania ...	"	5,621
Nanango ...	"	8,002	Thebarton ...	S.A.	8,720
Narracan ...	Qld.	6,433	Thuringowa ...	Qld.	5,095
New Norfolk ...	Vic.	5,408	Tintenbar ...	N.S.W.	5,865
Newtown and Chilwell ...	Tas.	6,124	Toombul ...	Qld.	6,791
Numurkah ...	Vic.	5,881	Toowong ...	"	6,286
Nunawading ...	"	6,844	Towong ...	Vic.	6,418
Patrick's Plains ...	"	7,130	Tungamah ...	"	5,376
Perth (Road District) ...	N.S.W.	6,894	Tweed ...	N.S.W.	7,308
Phillip Island & Woolamai ...	W.A.	5,066	Wagga Wagga ...	"	6,419
Pioneer ...	Vic.	7,067	Wallarobba ...	"	5,619
Poowong and Jeetho ...	Qld.	9,752	Wambo ...	Qld.	6,749
Port Germein ...	Vic.	7,449	Waranga ...	Vic.	5,291
Portland (Shire) ...	S.A.	5,210	Warrnambool (Shire) ...	"	8,653
Port Pirie ...	Vic.	5,291	Warrnambool (Town) ...	"	7,010
Preston ...	S.A.	9,385	Warwick ...	Qld.	5,248
Prospect ...	Vic.	5,049	Waugoola ...	N.S.W.	5,262
Rodney ...	S.A.	6,813	Wickham ...	"	8,434
Rookwood ...	Vic.	6,718	Windsor ...	Qld.	8,970
Rosalie ...	N.S.W.	5,418	Woodville ...	S.A.	7,787
Ryde ...	Qld.	7,982	Zeehan ...	Tas.	5,726
	N.S.W.	5,281			

§ 7. Assisted Immigration.

In the earlier days of settlement in Australia, State-assisted immigration played an important part. Such assistance practically ceased in Tasmania in 1891, and for the time being, in Victoria in 1873, and in South Australia in 1886. In New South Wales general State-aided immigration was discontinued in the year 1887, but those who arrived under that system and were still residing in New South Wales might, under special regulations, send for their wives and families. A certain amount of passage money, graduated according to the age of the immigrant, was required to be paid in each case. Under the provisions of these regulations, immigrants to the number of 1994 received State assistance during the years 1888 to 1899 inclusive. From 1900 to 1905 no assistance of any kind was given, but from 1906 onwards assistance has again been afforded. In Queensland and Western Australia, such assistance, although varying considerably in volume from year to year, has been accorded for many years past. Assistance to immigrants, which in the case of Victoria, had practically ceased in 1873, has recently been again afforded; and in South Australia the principle of State assistance was again introduced in 1911.

The number of assisted immigrants for the years 1911 and 1912, and also the total from the earliest times up to the end of 1912, is given in following table:—

ASSISTED IMMIGRANTS DURING 1911 AND 1912, AND UP TO END OF 1912.

STATES AND COMMONWEALTH.

State	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
No. Assisted during 1911	9,922	6,772	12,875	665	9,562	...	39,796
" " " 1912	14,956	15,112	6,462	3,212	6,970	(a)	46,712
Total to end of 1912 ...	252,637	164,815	203,204	99,225	31,594	21,699	773,174

(a) Figures not available.

§ 8. Enumerations and Estimates.

1. **Musters.**—Actual enumerations of Australia's population, of varying accuracy, have been made from the earliest times onward. Originally known as "Musters," these were first undertaken with a view to estimating the food and other requirements of the settlements. These musters, the results of which are said to have been very unreliable, appear to have been carried out at least annually from 1788 to 1825, when they were discontinued.

2. **Census-taking.**—The first regular Census in Australia was that of New South Wales, in November, 1828. The dates on which Censuses have been taken in the several States, and the populations enumerated thereat, are as shewn in the table on the next page.

3. **The Census of 1901.**—A conference of the Government Statisticians of Australia and New Zealand, held in Sydney in February and March, 1900, aimed at securing uniformity in the collection and compilation of the Census of 1901. The householder's schedule which it drafted made provision for the collection of information in all the States under the following heads, viz.:—Name, Sex, Age, Conjugal Condition, Relation to Head of Household, Occupation, Sickness and Infirmary, Birthplace, Length of Residence in Colony, Religion, Education, Materials of Houses and Number of Rooms. In addition to these, it was agreed that States so desiring might include further inquiries relating to Land, Live Stock, Crops, and certain other matters.

Provision was made for uniformity in the classification and compilation of the data by formulating rules for dealing with cases in which differences of opinion as to methods of treatment might exist. Thus, although conducted by six different States, the Census of the Commonwealth, as taken in 1901, was carried out on a fairly uniform plan, and consequently furnished data in many ways suitable for purposes of aggregation or comparison. A detailed examination of the results, however, gives many indications of departure from a common line of action, which, in the absence of a central authority, can hardly be avoided in an undertaking of this nature.

4. **The Census of 1911.**—Under Section 51, sub-section (xi.) of the Constitution Act, power is given to the Parliament of the Commonwealth to make laws with respect to "Census and Statistics." This power was brought into requisition in 1905, when the Census and Statistics Act of 1905 became law, being assented to on 8th December, 1905. Under this Act provision is made for the appointment of a Commonwealth Statistician, and amongst other duties that officer is charged with the taking of a Census in the year 1911 and in every tenth year thereafter.

The particulars which the Act requires to be included in the Census schedule are almost identical with those which were contained in the 1901 schedule, the principal alterations being that "Length of Residence in Australia" is specified instead of "Length of Residence in the Colony of Enumeration," that "Duration of Marriage" was to be asked in all cases, and that nationality was to be ascertained in addition to birthplace. As already stated in § 1 of the present section, the Census was taken as at 3rd April, 1911.

In each State a Census supervisor was appointed to control the collection within that State under the direction of the Commonwealth Statistician. Each State was then divided into Census districts, each of which was placed in the charge of an enumerator, and each Census district was further subdivided into collectors' districts, one collector for each district.

It should be noted, in connection with the Census of 1911, that a slight change in defining the date of reference has been made in order to accord with the English practice. In previous Australian censuses the date of the Census has been taken to be that of the day preceding the midnight which is adopted as the determining point. Thus, at the Census of 1901, where the figures given relate approximately to midnight between the 31st March and the 1st April, the Australian Census was stated to be that of the 31st March, while in a precisely similar case in England it was stated to be that of 1st April.

At the Census of 1911, taken as at midnight between the 2nd and 3rd April, the date of the Census has, in accordance with the English practice, been stated to be the 3rd April, and that day was gazetted as the day of the Census.

The total populations enumerated at the several Australian Censuses are shewn in the following table:—

AUSTRALIAN CENSUSES.

Census Year.	Population Enumerated (exclusive of Aborigines).						
	New South Wales.	Victoria.	Queensland	South Australia.	Western Australia.	Tasmania.	Commonwealth. (Total)
1828	(Nov.) 36,598	...	...	...	...	...	...
1833	(2nd Sept.) 60,794	...	...	...	...	...	...
1836	(2nd Sept.) 77,096	...	...	...	...	...	...
1841	(2nd March) 130,856	...	...	...	...	(27th Sept.) 50,216	...
1844	...	...	...	(26th Feb.) 17,366	...	...	...
1846	(2nd March) 189,609	...	...	(26th Feb.) 22,390	...	...	...
1847	...	...	...	...	...	(31st Dec.) 70,164	...
1848	...	...	...	...	(10th Oct.) 4,622	...	...
1851	(1st Mar.) (a) 268,344	...	...	(1st Jan.) 63,700	...	(1st Mar.) 70,130	...
1854	...	(26th Apr.) (b) 234,298	...	...	(30th Sept.) 11,743	...	...
1855	...	...	...	(31st Mar.) 85,821	...	...	...
1856	(1st March) 269,722	...	...	...	...	...	...
1857	...	(29th Mar.) 408,998	...	...	...	(31st Mar.) 81,492	...
1859	...	...	...	...	(31st Dec.) 14,837	...	...
1861	(7th April) 350,860	(7th April) 538,628	(7th April) (b) 30,059	(7th April) 126,830	...	(7th April) 89,977	...
1864	...	...	(1st Jan.) 61,467	...	...	...	...
1866	...	...	...	(26th Mar.) 163,452	...	...	...
1868	...	...	(2nd Mar.) 99,901	...	...	...	...
1870	...	...	...	...	(31st Mar.) 24,785	(7th Feb.) 99,328	...
1871	(2nd April) 502,998	(2nd April) 730,198	(1st Sept.) 120,104	(2nd April) 185,626	...	...	...
1876	...	...	(1st May) 173,283	(26th Mar.) 213,271	...	...	...
1881 (c)	749,825	861,566	213,525	279,865	29,708	115,705	2,250,194
1886	...	...	(1st May) 322,853	...	...	...	...
1891 (d)	1,123,954	1,139,840	393,718	320,431	49,782	146,667	3,174,392
1901 (e)	1,354,846	1,201,070	498,129	363,157	184,124	172,475	3,773,801
1911 (f)	1,646,734	1,315,551	605,813	408,558	284,114	191,211	4,455,005
	(g) 1,714			(h) 3,310			

(a) Including Port Phillip District, which afterwards became the Colony of Victoria. (b) Previously included with New South Wales. (c) 3rd April. (d) 5th April. (e) 31st March. (f) 3rd April. (g) Federal Territory, previously included with New South Wales. (h) Northern Territory, previously included with South Australia.

5. Estimates of Population.—In the absence of an annual enumeration of the population, it becomes necessary to adopt some method of estimating it for intercensal periods, basing such estimates on the results of the most recent Censuses. The manner in which

this is effected varies, however, in different parts of the world. In England, for example, the assumption made is that the rate of increase of the preceding intercensal period will continue unchanged during the current period. Again, in the United States, it has been assumed, in certain cases, that the numerical increase per annum ascertained for the preceding intercensal period will hold good for the current period. From the earliest times in Australia, "statistics of fluctuation" have been obtained from the records of births, deaths, arrivals and departures. With reasonable thoroughness in the collection of such statistics, the deduced estimates possess much greater weight than those based on the mere assumption of a continuation of the increase experienced in the preceding period. In most cases, however, estimates of population, based on statistics of fluctuation, are found to be in excess at the Census, thus indicating a uniform tendency to over-estimation, and the necessity for a correction. In the population figures given in the earlier portion of the present section, the estimates of the population of the several States have been carefully revised, the results of the various Censuses being taken in conjunction with the records of births, deaths, arrivals and departures. It is believed that by this means the population of the Commonwealth from the date of settlement onwards has been obtained with a high degree of accuracy, and that the figures supplied represent a reasonably close approximation to the actual numbers. A detailed account of the adjustment for the decennium 1901-10 will be found on pp. 112-118 of Year Book No. 6. Particulars for the several States from the date of settlement onwards are given in the following tables, and are shewn by graphs on pages 127 to 129 :—

COMMONWEALTH POPULATION FROM EARLIEST DATE.

MALES.

Year.	Estimated Population at end of Year.							
	States.						Territories.	
	N. South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	North-eastern.	Federal
1788	...	...	...	...	...	...	...	...
1790	...	...	...	...	...	...	...	...
1795	...	...	...	...	...	...	...	...
1800	3,780	...	...	...	...	...	...	3,780
1805	5,395	...	...	...	...	...	...	5,395
1810	7,585	...	...	...	...	...	...	7,585
1815	9,848	...	...	...	...	...	...	9,848
1820	23,784	...	...	...	...	...	...	23,784
1825	29,309	...	...	...	...	10,979†	...	40,288
1830	33,900	...	...	...	877	18,108	...	52,885
1835	51,949	...	...	...	1,231	28,749	...	81,929
1840	85,560	...	...	8,272	1,434	32,040	...	127,306
1845	113,739	...	...	12,810	2,689	43,921	...	173,159
1850	154,976	...	...	35,902	3,576	44,229	...	238,683
1855	147,822	226,462†	...	48,843	8,311	38,680	...	470,118
1860	197,851	330,302	16,817†	64,340	9,597	49,653	...	668,560
1865	222,890	348,717	53,292	84,255	13,575	50,549	...	773,278
1870	272,121	397,230	69,221	94,894	15,511	53,517	...	902,494
1875	322,534	424,269	102,161	108,706	16,141	54,678	...	1,028,489
1880	404,952	450,558	124,013	147,438	16,985	60,568	...	1,204,514
1885	518,606	504,097	186,866	162,425	20,688	67,712	...	1,460,394
1890	602,704	595,519	223,252	166,049	28,854	76,453	...	1,692,831
1895	668,209	607,933	248,865	180,314	69,733	80,485	...	1,855,539
1900	716,047	601,773	274,684	180,349	110,088	89,763	4,288‡	1,976,992
1905	782,897	598,134	291,807	181,467	146,498	95,947	3,368	2,100,118
1910	858,181	646,482	325,513	206,557	157,971	98,866	2,738	2,296,308
1912	934,846	689,825	344,139	218,613	174,056	101,561	2,854	2,466,968

* Details not available. † Previously included with New South Wales. ‡ Previously included with South Australia.

COMMONWEALTH POPULATION FROM EARLIEST DATE.—Continued.

FEMALES.

Year.	Estimated Population at end of Year.									C'wealth.
	STATES.						TERRITORIES.			
	N.S.W.	Victoria.	Q'nsland.	S Aust.	W. Aust.	Tasman.	North-ern.	Fed-eral.		
1788	...	...	...	...	...	...	...	...	*	
1790	...	...	...	...	...	...	...	...	*	
1795	...	...	...	...	...	...	...	...	*	
1800	1,437	...	...	...	...	...	...	...	1,437	
1805	2,312	...	...	...	...	...	...	...	2,312	
1810	3,981	...	...	...	...	...	...	...	3,981	
1815	5,215	...	...	...	...	...	...	...	5,215	
1820	9,759	...	...	...	...	...	...	...	9,759	
1825	9,004	...	...	...	...	3,213	...	...	12,217	
1830	10,688	...	...	...	295	6,171	...	...	17,154	
1835	19,355	...	...	...	647	11,423	...	...	31,425	
1840	41,908	...	...	6,358	877	13,959	...	...	63,102	
1845	74,179	...	...	9,650	1,790	20,370	...	...	105,989	
1850	111,924	...	...	27,798	2,310	24,641	...	...	166,673	
1855	118,179	120,843†	...	48,544	4,294	31,282	...	...	323,142	
1860	150,695	207,932	11,239†	61,242	5,749	40,168	...	...	477,025	
1865	185,616	269,074	33,629	77,222	7,806	43,418	...	...	616,765	
1870	225,871	326,695	46,051	89,652	9,624	47,369	...	...	745,262	
1875	270,833	370,665	66,944	101,370	10,861	49,061	...	...	869,734	
1880	336,190	408,047	87,027	128,955	12,576	54,222	...	...	1,027,017	
1885	425,261	455,741	129,815	146,888	15,271	61,148	...	...	1,234,124	
1890	510,571	538,209	168,864	152,898	19,648	68,334	...	...	1,458,524	
1895	587,294	577,743	194,199	171,654	30,782	74,410	...	...	1,636,082	
1900	644,258	594,440	219,163	176,901	69,879	83,137	569†	...	1,788,347	
1905	704,987	612,287	239,675	181,154	103,640	90,438	678	...	1,932,859	
1910	785,674	654,926	273,503	200,311	118,861	94,937	563	...	2,128,775	
1912	842,688	690,736	292,286	211,477	132,073	95,644	621	866†	2,266,391	

PERSONS.

1788	859	...	...	...	...	...	...	...	859
1790	2,056	...	...	...	...	...	...	...	2,056
1795	3,466	...	...	...	...	...	...	...	3,466
1800	5,217	...	...	...	...	...	...	...	5,217
1805	7,707	...	...	...	...	...	...	...	7,707
1810	11,566	...	...	...	...	...	...	...	11,566
1815	15,063	...	...	...	...	...	...	...	15,063
1820	33,543	...	...	...	...	...	...	...	33,543
1825	38,313	...	...	...	...	14,192†	...	...	52,505
1830	44,588	...	...	...	1,172	24,279	...	...	70,039
1835	71,304	...	...	...	1,878	40,172	...	...	113,354
1840	127,468	...	...	14,630	2,311	45,999	...	...	190,408
1845	187,918	...	...	22,460	4,479	64,291	...	...	279,148
1850	266,900	...	...	63,700	5,886	68,870	...	...	405,356
1855	266,001	347,305†	...	97,387	12,605	69,962	...	...	793,260
1860	348,546	538,234	28,056†	125,582	15,346	89,821	...	...	1,145,585
1865	408,506	617,791	86,921	161,477	21,381	93,967	...	...	1,390,043
1870	497,992	723,925	115,272	184,546	25,135	100,886	...	...	1,647,756
1875	593,367	794,934	169,105	210,076	27,002	103,739	...	...	1,898,223
1880	741,142	858,605	211,040	276,393	29,561	114,790	...	...	2,231,531
1885	943,867	959,838	316,681	309,313	35,959	128,860	...	...	2,694,518
1890	1,113,275	1,133,728	392,116	318,947	48,502	144,787	...	...	3,151,355
1895	1,255,503	1,185,676	443,064	351,968	100,515	154,895	...	...	3,491,621
1900	1,360,305	1,196,213	493,847	357,250	179,967	172,900	4,857†	...	3,765,339
1905	1,487,884	1,210,421	531,482	362,621	250,138	186,385	4,046	...	4,032,977
1910	1,643,855	1,301,408	599,016	406,868	276,832	193,803	3,301	...	4,425,083
1912	1,777,534	1,330,561	636,425	430,090	306,129	197,205	3,475	1,940†	4,733,359

* Details not available.

† Previously included with New South Wales.

‡ Previously

included with South Australia.

The tables on the two preceding pages, shewing the quinquennial and other figures for the male, female, and total population of each State and the Commonwealth, give sufficient indication, for general purposes, of its progress. A reference to the diagrams given hereinafter (pp. 127 to 129), on which the graphs shew the particulars for *each* year, is also desirable. The characteristics of the fluctuations of each element, or of the totals, will be more readily perceived by reference to the graphs than they possibly can by reference to these numerical tables. The earliest date for which particulars as to sex were available is 1796. The figures from 1788 to 1825 inclusive are based upon the results of the musters taken in those years; those for subsequent years are founded upon estimates made on the basis of the Census results and the annual returns of births and deaths and immigration and emigration.

The following table furnishes particulars relative to the increase of population of the Commonwealth during each decade, and the percentage of such increase on the population to the commencement of the decade:—

INCREASE OF COMMONWEALTH POPULATION.

Decade ended 31st December.	Increase during Decade—					
	Numerical.			Percentage.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1790 ...	*	*	2,056	% *	% *	% *
1800 ...	*	*	3,161	*	*	153.75
1810 ...	3,805	2,544	6,349	100.66	177.04	121.70
1820 ...	16,199	5,778	21,977	213.57	145.14	190.01
1830 ...	29,101	7,395	36,496	122.36	75.78	108.80
1840 ...	74,421	45,948	120,369	140.72	267.86	171.86
1850 ...	111,377	103,571	214,948	87.49	164.13	112.89
1860 ...	429,877	310,352	740,229	180.10	186.20	182.61
1870 ...	233,934	268,237	502,171	34.99	56.23	43.84
1880 ...	302,020	281,755	583,775	33.47	37.81	35.43
1890 ...	488,317	431,507	919,824	40.54	42.02	41.22
1900 ...	284,161	329,823	613,984	16.79	22.61	19.48
1910 ...	319,316	340,428	659,744	16.15	19.04	17.52

* Not available.

§ 9. Census of 3rd April, 1911.

1. **Numbers Enumerated.**—As already mentioned, the Census for the whole of the Australian Commonwealth was taken as for the night between the 2nd and the 3rd of April, 1911, and was the first Census under the provisions of the Commonwealth Census and Statistics Act 1905, which provides for the enumeration of the whole of Australia being dealt with from one centre instead of each State being responsible for its own count as on previous occasions. The numbers recorded in the several States and Territories of the Commonwealth were as follows:—

POPULATION OF THE COMMONWEALTH, 3rd APRIL, 1911 (EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States and Territories.	Males.	Females.	Persons.
States—			
New South Wales ...	857,698	789,036	1,646,734
Victoria ...	655,591	659,960	1,315,551
Queensland ...	329,506	276,307	605,813
South Australia ...	207,358	201,200	408,558
Western Australia ...	161,565	120,549	282,114
Tasmania ...	97,591	93,620	191,211
Territories—			
Northern ...	2,734	576	3,310
Federal ...	992	722	1,714
Total Commonwealth ...	2,313,035	2,141,970	4,455,005

2. **Growth during Last Three Decennia.**—The total increase of population of the Commonwealth between the Census of 31st March, 1901, and that of 3rd April, 1911, was 681,204, of which 335,107 were males and 346,097 were females, as compared with a total increase of 599,409, comprising 273,889 males and 325,520 females, for the preceding ten years. The population of each sex enumerated at the Censuses of 3rd April, 1881, 5th April, 1891, 31st March, 1901, and 3rd April, 1911, was as follows:—

POPULATION OF COMMONWEALTH AT LAST FOUR CENSUSES

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

Date of Census.			Males.	Females.	Persons.	(a) Masculinity
3rd April, 1881	...	...	1,214,913	1,035,281	2,250,194	117.35
5th April, 1891	...	...	1,704,039	1,470,353	3,174,392	115.89
31st March, 1901	...	...	1,977,928	1,795,873	3,773,801	110.14
3rd April, 1911	...	...	2,313,035	2,141,970	4,455,005	107.99

(a) Number of males per 100 females.

The increases in the populations of the several States during the past three decennia have been as follow:—

DECENNIAL INCREASES IN THE TOTAL POPULATION.

State.	1881-1891.		1891-1901.		1901-1911.	
	Numerical.	Per cent.	Numerical.	Per cent.	Numerical.	Per cent.
N.S. Wales (a) ...	374,129	49.90	230,892	20.54	293,602	21.67
Victoria ...	278,274	32.30	61,230	5.37	114,481	9.53
Queensland ...	180,193	84.39	104,411	26.52	107,684	21.62
South Australia ...	39,119	14.15	42,813	13.57	50,212	14.01
West. Australia ...	20,074	67.57	134,342	269.86	97,990	53.22
Tasmania ...	30,962	26.76	25,808	17.60	18,736	10.86
N. Territory ...	1,447	41.93	(b)— 87	(b)—1.78	(b)—1,501	(b)—31.20
Commonwealth ...	924,198	41.07	599,409	18.88	681,204	18.05

(a) Including Federal Capital Territory. (b) Decrease.

For the Commonwealth as a whole the increase in population during the decennium 1901-11 was greater by 81,795 than that for the decennium 1891-1901. The rate of increase per cent. was, however, not so great, being 18.05 per cent. for 1901-11, as against 18.88 for 1891-1901. The former corresponds to an increase of 1.67 per cent. per annum, the latter to an increase of 1.74 per cent. per annum.

As regards the separate States, the numerical increases in the case of New South Wales, Victoria, Queensland and South Australia were greater for 1901-11 than for 1891-1901. On the other hand, Western Australia and Tasmania experienced greater numerical increases in the earlier than in the later decennium, while the Northern Territory, which exhibited an actual loss of population in both decennia, experienced a much heavier loss in 1901-11 than in 1891-1901. In the matter of rates of increase per cent. New South Wales, Victoria and South Australia were higher in 1901-11 than in 1891-1901, while Queensland, Western Australia and Tasmania were lower, and the rate of decrease in the Northern Territory was much heavier.

§ 10. Principal Results of Census of 1911.

1. **Census Results.**—In the first issue of the Official Year Book tables are given showing in some detail particulars concerning the Census of 1901 for the several States under the headings of Ages, Birthplaces, Occupations, Religions, and Conjugal Condition. (See Year Book No. 1, pp. 164 to 179.) In the official Year Book No. 6, pp. 143 to 171, similar and a few additional particulars appeared as to the Census of 3rd April, 1911. In the following tables this information is given in a condensed form.

2. **Ages.**—The numbers of persons of each sex at each age enumerated in the several States of the Commonwealth at the Census of 3rd April, 1911, are as follows:—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO AGE (EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

Age Group.	States.						Territories.		Total C'wth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'n.	Federal.	
MALES.									
Under 5 years	102,003	73,061	37,724	24,109	17,709	12,636	84	85	267,411
5 & under 15	164,273	129,201	63,522	40,059	26,596	21,393	158	188	445,390
15 " " 21	100,551	81,223	39,532	25,861	14,533	11,744	107	119	273,670
21 " " 45	316,463	229,179	121,711	75,059	72,569	32,779	1,002	358	849,120
45 " " 65	133,550	106,201	51,716	32,067	25,090	14,659	1,221	181	364,685
65 .. upwards	36,368	33,467	13,319	9,285	3,916	3,848	102	53	100,358
Unspecified ...	4,490	3,259	1,982	918	1,152	532	60	8	12,401
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Under 5 years	98,863	70,417	35,980	23,421	17,215	12,144	87	95	258,222
5 & under 15	161,118	126,427	62,413	39,262	26,014	20,455	148	180	436,017
15 " " 21	97,950	81,564	37,160	25,605	12,974	11,751	83	106	267,193
21 " " 45	292,364	242,746	97,277	73,022	47,268	32,018	201	213	785,109
45 " " 65	104,604	100,670	33,039	29,206	13,638	12,729	47	88	294,221
65 .. upwards	30,134	34,356	9,254	9,730	2,720	3,993	6	32	90,225
Unspecified ...	3,803	3,780	1,184	954	720	530	4	8	10,983
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Under 5 years	200,866	143,478	73,704	47,530	34,924	24,780	171	180	525,633
5 & under 15	325,391	255,628	125,935	79,321	52,610	41,848	306	368	881,407
15 " " 21	198,501	152,787	76,692	51,466	27,507	23,495	190	225	540,863
21 " " 45	608,827	471,925	218,988	148,081	119,837	64,797	1,203	571	1,634,229
45 " " 65	238,354	206,871	84,755	61,273	38,728	27,388	1,268	269	658,966
65 .. upwards	66,502	67,823	22,573	19,015	6,636	7,841	108	85	190,583
Unspecified ...	8,293	7,039	3,166	1,872	1,872	1,062	64	16	23,384
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

3. **Birthplaces.**—In the next table particulars are given of the populations of the several States of the Commonwealth on 3rd April, 1911, classified according to sex and birthplace, the birthplaces being grouped under the five continental divisions of the globe, with two additional headings for those born in Polynesia, and those born at sea. Of the total population of 4,455,005, those of unspecified birthplace numbered 30,470, or slightly less than 7 per thousand:—

AUSTRALIAN POPULATION at 3rd APRIL, 1911, CLASSIFIED ACCORDING TO BIRTHPLACE

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

Birthplace.	States.						Territories.		Total C'with.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	North- ern.	Fede- ral.	
MALES.									
Australia	691,736	541,659	232,757	173,811	111,269	86,948	1,029	844	1,840,053
New Zealand	7,296	4,968	1,632	554	1,819	574	17	2	16,862
United Kingdom	121,046	82,927	68,406	24,233	32,191	7,577	224	113	336,767
Other European Countries...	15,507	11,501	12,997	5,636	8,080	776	45	4	54,546
Asia... ..	10,886	5,939	8,378	1,033	5,605	579	1,359	5	33,284
Africa	1,087	747	332	193	244	70	9	...	2,682
America	3,111	1,874	1,218	523	813	183	12	4	7,738
Polynesia	676	121	1,567	23	57	21	11	...	2,476
At Sea	817	630	342	211	146	62	1	...	2,209
Unspecified	6,036	5,225	1,877	1,091	1,341	801	27	20	16,418
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Australia	685,483	567,286	213,938	176,450	97,781	85,549	476	654	1,827,617
New Zealand	6,667	5,099	944	432	1,235	626	1	2	15,006
United Kingdom	83,348	74,509	51,609	20,148	18,361	5,895	38	47	253,955
Other European Countries...	4,264	3,845	7,230	2,353	1,348	358	4	1	19,403
Asia... ..	1,077	737	469	211	391	199	54	...	3,158
Africa	912	751	195	164	179	75	...	...	2,276
America	1,313	1,109	470	241	310	96	...	1	3,540
Polynesia	528	158	161	32	31	23	1	...	994
At Sea	662	673	287	211	135	60	1	...	2,029
Unspecified	4,782	5,793	984	958	778	739	1	17	14,052
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Australia	1,377,219	1,108,945	446,695	350,261	209,050	172,497	1,505	1,498	3,667,670
New Zealand	13,963	10,067	2,576	986	3,054	1,200	18	4	31,868
United Kingdom	204,394	157,436	120,015	44,431	50,552	13,472	262	160	590,722
Other European Countries...	19,771	15,346	20,227	7,989	9,428	1,134	49	5	73,949
Asia... ..	11,463	6,676	8,867	1,244	5,996	778	1,413	5	36,442
Africa	1,999	1,498	527	357	423	145	9	...	4,958
America	4,424	2,983	1,688	764	1,123	279	12	5	11,278
Polynesia	1,204	279	1,728	55	88	44	12	...	3,410
At Sea	1,479	1,303	629	422	281	122	2	...	4,238
Unspecified	10,818	11,018	2,861	2,049	2,119	1,540	28	37	30,470
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

4. **Occupations.**—In the compilation of the results of the Census of 3rd April, 1911, the populations of the several States and Territories were tabulated according to occupation in the following classes:—

(i.) *Professional.* Embracing all persons not otherwise classed, mainly engaged in the government and defence of the country, and in satisfying the moral, intellectual, and social wants of its inhabitants.

(ii.) *Domestic.* Embracing all persons engaged in the supply of board and lodging, and in rendering personal services for which remuneration is usually paid.

(iii.) *Commercial.* Embracing all persons directly connected with the hire, sale, transfer, distribution, storage, and security of property and materials.

(iv.) *Transport and Communication.* Embracing all persons engaged in the transport of persons or goods, or in effecting communication.

(v.) *Industrial.* Embracing all persons not otherwise classed who are principally engaged in various works of utility, or in specialities connected with the manufacture, construction, modification, or alteration of materials so as to render them more available

for the various uses of man, but excluding, as far as possible, all who are mainly or solely engaged in the service of commercial interchange.

(vi.) *Agricultural, Pastoral, Mineral, and other Primary Producers.* Embracing all persons mainly engaged in the cultivation or acquisition of food products, and in obtaining other raw materials from natural sources.

(vii.) *Independent.* Embracing all persons of independent means having no specific occupation.

(viii.) *Dependents.* Embracing all persons dependent upon relatives or natural guardians, including wives, children, and others, not otherwise engaged in pursuits for which remuneration is paid, and all persons depending upon private charity, or whose support is a burthen on the public revenue.

Particulars concerning the number contained in each of these classes are given in the table hereunder:—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO OCCUPATION

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

Occupation.	States.						Territories.		
	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	North- ern.	Feder- al.	Common- wealth
MALES.									
Class									
I. Professional ...	36,763	26,607	11,403	6,644	6,746	3,350	73	52	91,638
II. Domestic ...	18,898	13,619	6,354	3,418	4,319	1,489	127	11	48,235
III. Commercial ...	88,208	74,448	28,905	22,304	15,378	7,041	196	19	236,499
IV. Transport and Communication ...	60,367	37,629	22,521	15,523	11,900	4,407	194	13	152,554
V. Industrial ...	171,921	141,317	56,949	44,385	24,043	14,710	208	210	453,743
VI. Primary Producers	199,143	139,221	98,721	47,642	53,059	30,413	1,673	396	570,268
VII. Independent	5,507	4,546	2,027	931	478	436	9	5	13,989
VIII. Dependents	265,731	202,357	98,359	62,275	43,913	33,630	236	272	706,773
Unspecified ...	11,160	15,847	4,267	4,236	1,729	2,115	18	14	39,386
Total ...	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Class									
I. Professional ...	19,377	17,212	6,250	4,529	3,453	2,131	13	8	52,973
II. Domestic ...	54,483	48,556	20,216	14,060	9,303	6,375	74	64	153,131
III. Commercial ...	18,112	17,163	5,659	4,674	2,906	1,671	...	3	50,188
IV. Transport and Communication ...	1,597	1,609	621	347	326	331	...	6	4,837
V. Industrial ...	36,093	46,456	11,313	8,181	3,985	2,558	4	4	108,594
VI. Primary Producers	4,950	5,163	3,183	1,406	528	614	12	24	15,880
VII. Independent	3,401	3,507	731	761	272	443	...	1	9,116
VIII. Dependents	650,480	518,780	227,711	166,432	99,554	79,171	473	612	1,743,213
Unspecified ...	543	1,514	623	810	222	326	...	...	4,038
Total ...	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Class									
I. Professional ...	56,140	43,819	17,653	11,173	10,199	5,481	86	60	144,611
II. Domestic ...	73,381	62,175	26,570	17,478	13,622	7,864	201	75	201,366
III. Commercial ...	106,320	91,611	34,564	26,978	18,284	8,712	196	22	286,687
IV. Transport and Communication ...	61,964	39,238	23,142	15,870	12,226	4,738	194	19	157,391
V. Industrial ...	208,014	187,773	68,262	52,566	28,028	17,268	212	214	562,337
VI. Primary Producers	204,093	144,384	101,904	49,048	53,587	31,027	1,685	120	586,148
VII. Independent	8,908	8,053	2,758	1,692	750	879	9	6	23,055
VIII. Dependents	916,211	721,137	326,070	228,707	143,467	112,501	709	884	2,449,986
Unspecified ...	11,703	17,361	4,890	5,046	1,951	2,441	18	14	43,424
Total ...	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

5. **Religions.**—In the Act under which the Census of 1911 was taken in the several States, persons enumerated were required under penalty to furnish replies to all the inquiries contained in the schedule, with the exception of that relating to religion. In this case, any person objecting to give such particulars was allowed to insert the words "Object to state" in the space provided for religion. Of the total population of 4,455,005 there were 83,003, or 1.86 per cent., who availed themselves of this option. There were also 36,114, or 0.81 per cent., concerning whom no particulars as to religion were obtained.

Of the remainder, 4,274,414, or 95.95 per cent., were members of the various Christian denominations, 36,785 were members of non-Christian religions, 14,673 were of indefinite religious belief, and 10,016 stated that they were of no religion.

Amongst the Christian denominations, that most numerous represented was the Church of England, with 1,710,443 adherents, the next in order being the Roman Catholic (921,425), the Presbyterian (553,336), the Methodist (547,806), the Baptist (97,074), the Congregational (74,046), the Lutheran (72,395), the Church of Christ (38,748), and the Salvation Army (26,665).

The principal non-Christian religions represented in Australia were the Hebrew, Confucian, Mohammedan and Buddhist, the members of the Hebrew congregation totalling 17,287.

Those included under the head of "Indefinite" in the attached table consist mainly of persons who stated that they were "Freethinkers" or "Agnostics," or returned themselves as being of "No Denomination," while under the head of "No Religion" are given those who were so returned on the schedules as well as a small number who stated that they were "Atheists."

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO RELIGION
(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

Religion.	States.						Territories.		Total C'w'ith.
	N.S.W.	Vic.	Q'land	S.A.	W.A.	Tas.	North- ern.	Fede- ral.	
MALES.									
Christian	820,484	623,789	305,929	192,825	147,116	92,902	1,050	961	2,185,056
Non-Christian	8,965	5,618	5,627	989	4,913	265	1,256	1	27,634
Indefinite	3,068	3,347	1,662	791	1,223	284	20	3	10,398
No Religion	2,471	2,110	1,595	787	1,074	169	31	2	8,239
Object to State	14,989	14,212	8,961	9,930	4,547	3,008	86	13	55,766
Unspecified	7,721	6,515	5,712	2,036	2,692	963	291	12	25,942
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035
FEMALES.									
Christian	773,845	643,264	269,895	193,718	116,644	90,938	349	705	2,069,358
Non-Christian	3,808	3,224	563	442	937	71	106	...	9,151
Indefinite	1,143	1,877	435	344	332	142	2	...	4,275
No Religion	481	531	311	221	186	41	6	...	1,777
Object to State	6,997	7,758	3,611	5,331	1,598	1,921	12	9	27,237
Unspecified	2,762	3,306	1,492	1,144	852	507	101	8	10,172
Total	789,036	659,960	276,307	201,200	120,549	93,620	576	722	2,141,970
PERSONS.									
Christian	1,594,329	1,267,053	575,824	386,543	263,760	183,840	1,399	1,666	4,274,414
Non-Christian	12,773	8,842	6,190	1,431	5,890	336	1,362	1	36,785
Indefinite	4,211	5,224	2,097	1,135	1,555	426	22	3	14,673
No Religion	2,952	2,641	1,906	1,008	1,260	210	37	2	10,016
Object to State	21,986	21,970	12,592	15,261	6,145	4,929	98	22	83,003
Unspecified	10,463	9,821	7,204	3,180	3,544	1,470	392	20	36,114
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

6. **Conjugal Condition.**—In the following tables particulars are given concerning the population of the several States and Territories on 3rd April, 1911, classified according to age and conjugal condition :—

AUSTRALIAN POPULATION AT 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND AGE.

MALES.

Age Group.	States.						Territories.		C'wealth
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas	North-ern.	Fed-eral.	
NEVER MARRIED.									
Under 15 ...	266,274	202,261	101,246	64,168	44,305	34,029	242	273	712,798
15 & under 21	99,446	80,655	39,270	25,648	14,432	11,630	106	119	271,306
21 " 45	153,938	113,648	65,276	36,380	38,446	14,707	733	225	423,353
45 " 65	27,381	18,713	13,684	4,749	7,294	2,158	862	52	74,893
65 & upwards	7,222	5,527	2,954	938	942	413	63	10	18,069
Unspecified	2,089	1,800	1,148	459	641	263	54	4	6,458
Total	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877

MARRIED.

Under 15 ...	2	1	...	...	...	...	...	...	3
15 & under 21	1,097	566	260	210	99	114	1	...	2,347
21 " 45	157,224	111,942	54,549	37,708	32,725	17,488	236	125	411,997
45 " 65	95,496	79,536	34,056	24,987	15,630	11,291	304	114	261,414
65 & upwards	20,086	18,594	7,159	5,879	1,997	2,389	32	33	56,169
Unspecified	1,523	1,111	522	318	251	188	2	4	3,919
Total	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849

WIDOWED.

Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	8	2	2	2	1	...	...	...	15
21 " 45	3,951	2,956	1,540	865	1,153	402	12	6	10,885
45 " 65	9,855	7,496	3,740	2,268	2,029	1,102	46	15	26,551
65 & upwards	8,903	9,220	3,169	2,457	962	1,021	6	9	25,747
Unspecified	170	146	62	35	35	28	1	...	477
Total	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675

DIVORCED.

Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	...	...	...	1	1	...	...	...	2
21 " 45	569	258	115	45	99	24	...	...	1,110
45 " 65	566	267	81	39	77	31	1	...	1,062
65 & upwards	81	41	9	7	6	3	...	1	148
Unspecified	14	9	9	1	4	1	...	...	38
Total	1,230	575	214	93	187	59	1	1	2,360

AUSTRALIAN POPULATION AT 3RD APRIL, 1911.—Continued.

Age Group.	States.						Territories.		C'wealth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Fed- eral.	
NOT STATED.									
Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	...	...	...	...	...	...	...	...	...
21 and „ 45	781	375	231	61	146	158	21	2	1,775
45 „ „ 65	252	189	155	24	60	77	8	...	765
65 & upwards	76	85	28	4	9	22	1	...	225
Unspecified	694	193	241	105	221	52	3	...	1,509
Total	1,803	842	655	194	436	309	33	2	4,274

FEMALES.

NEVER MARRIED.

Under 15 ...	259,975	196,838	98,389	62,631	43,229	32,598	235	275	694,220
15 & under 21	90,844	78,170	34,851	24,409	11,969	10,919	63	104	251,329
21 „ 45	103,042	101,293	32,510	28,098	12,199	11,209	43	66	288,460
45 „ 65	10,689	15,274	2,030	3,288	1,048	1,563	2	1	33,895
65 & upwards	1,868	2,027	322	543	110	330	...	1	5,201
Unspecified	1,185	1,255	377	311	252	174	3	4	3,561
Total	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666

MARRIED.

Under 15 ...	6	6	4	2	...	1	...	...	19
15 & under 21	6,977	3,303	2,280	1,166	988	818	18	2	15,552
21 „ 45	181,426	134,801	62,181	43,392	33,554	20,063	147	141	475,705
45 „ 65	74,473	65,795	24,769	20,798	9,945	9,048	39	70	204,937
65 & upwards	11,245	10,748	3,998	3,521	917	1,338	2	16	31,785
Unspecified	2,089	1,812	682	506	376	305	1	4	5,775
Total	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773

WIDOWED.

Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	29	25	9	6	7	5	...	...	81
21 „ 45	6,936	6,143	2,187	1,469	1,407	666	9	5	19,122
45 „ 65	19,234	19,329	6,200	5,090	2,617	2,060	6	17	54,553
65 & upwards	16,959	21,515	4,924	5,657	1,692	2,306	4	15	53,072
Unspecified	413	504	100	112	62	49	...	...	1,240
Total	43,571	47,516	13,720	12,334	5,785	5,086	19	37	128,068

AUSTRALIAN POPULATION AT 3RD APRIL, 1911—Continued.

Age Group.	States.						Territories.		C'wealth.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Fed-eral.	
DIVORCED.									
Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21	4	4	...	...	...	...	...	...	8
21 " 45	774	396	57	34	76	21	...	1	1,359
45 " 65	360	231	24	24	26	12	...	...	677
65 & upwards	36	27	4	3	...	1	...	...	71
Unspecified	16	7	...	1	1	...	...	...	25
Total	1,190	665	85	62	103	34	...	1	2,140

NOT STATED.

Under 15 ...	...	...	...	...	...	...	...	...	...
15 & under 21 ...	96	62	20	24	10	9	2	...	223
21 " 45	186	113	42	29	32	59	2	...	463
45 " 65	48	41	16	6	2	46	...	...	159
65 & upwards	26	39	6	6	1	18	...	...	96
Unspecified...	100	202	25	24	29	2	...	...	382
Total ...	456	457	109	89	74	134	4	...	1,323

SUMMARY OF PERSONS RECORDED IN EACH STATE AND TERRITORY OF THE COMMONWEALTH AT THE CENSUS OF 3rd APRIL, 1911, CLASSIFIED ACCORDING TO CONJUGAL CONDITION AND SEX

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

MALES.

Conjugal Condition.	States.						Territories.		C'wlth.
	N.S.W.	Victoria	Q'land.	S. Aust.	W.Aust.	Tas.	North-ern.	Federal.	
Never married ...	556,350	422,604	223,578	132,342	106,060	63,200	2,060	683	1,506,877
Married ...	275,428	211,750	96,546	69,102	50,702	31,470	575	276	735,849
Widowed ...	22,887	19,820	8,513	5,627	4,180	2,553	65	30	63,675
Divorced...	1,230	575	214	93	187	59	1	1	2,360
Not stated	1,803	842	655	194	436	309	33	2	4,274
Total	857,698	655,591	329,506	207,358	161,565	97,591	2,734	992	2,313,035

FEMALES.

Never married ...	467,603	394,857	168,479	119,330	68,807	56,793	346	451	1,276,666
Married ...	276,216	216,465	93,914	69,385	45,780	31,573	207	233	733,773
Widowed ...	43,571	47,516	13,720	12,334	5,785	5,066	19	37	128,068
Divorced...	1,190	665	85	62	103	34	...	1	2,140
Not stated	456	457	109	89	74	134	4	...	1,323
Total	789,036	659,960	276,307	201,200	120,549	98,620	576	722	2,141,970

PERSONS.

Never married ...	1,023,953	817,461	392,057	251,472	174,867	119,903	2,406	1,134	2,783,543
Married ...	551,644	428,215	190,460	138,487	96,482	63,043	782	509	1,469,622
Widowed ...	66,458	67,336	22,233	17,961	9,965	7,630	84	67	191,743
Divorced ...	2,420	1,240	299	155	290	93	1	2	4,500
Not stated	2,259	1,299	764	283	510	443	37	...	5,597
Total	1,646,734	1,315,551	605,813	408,558	282,114	191,211	3,310	1,714	4,455,005

7. **Education.**—In the following table are contained particulars of the education of the population of the States and Territories of the Commonwealth as at the date of the Census of 3rd April, 1911. Of the total population of 4,455,005 there were 3,650,030, or 81.93 per cent., who were able to read and write in the English language, and 26,210, or 0.59 per cent., who were able to read and write in a foreign language, though unable to read or write English.

**EDUCATION OF THE POPULATION OF THE STATES AND TERRITORIES OF
THE COMMONWEALTH OF AUSTRALIA**

AT THE CENSUS OF 3RD OF APRIL, 1911 (EXCLUSIVE OF FULL-BLOODED
ABORIGINALS).

MALES.

States and Territories.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.		Read and Write.	Read Only.			
STATES—							
New South Wales ...	696,258	2,565	5,889	497	134,215	18,274	857,601
Victoria ...	547,753	1,271	3,572	532	88,995	13,468	655,598
Queensland ...	265,896	1,136	6,185	678	49,406	6,205	329,506
South Australia ...	169,508	556	1,156	102	31,891	4,145	207,358
Western Australia ...	128,648	311	4,371	303	22,524	5,408	161,565
Tasmania ...	76,247	456	181	20	18,244	2,443	97,591
TERRITORIES—							
Northern ...	1,126	4	852	29	642	81	2,734
Federal... ..	820	9	2	...	140	21	992
Total Commonwealth ...	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

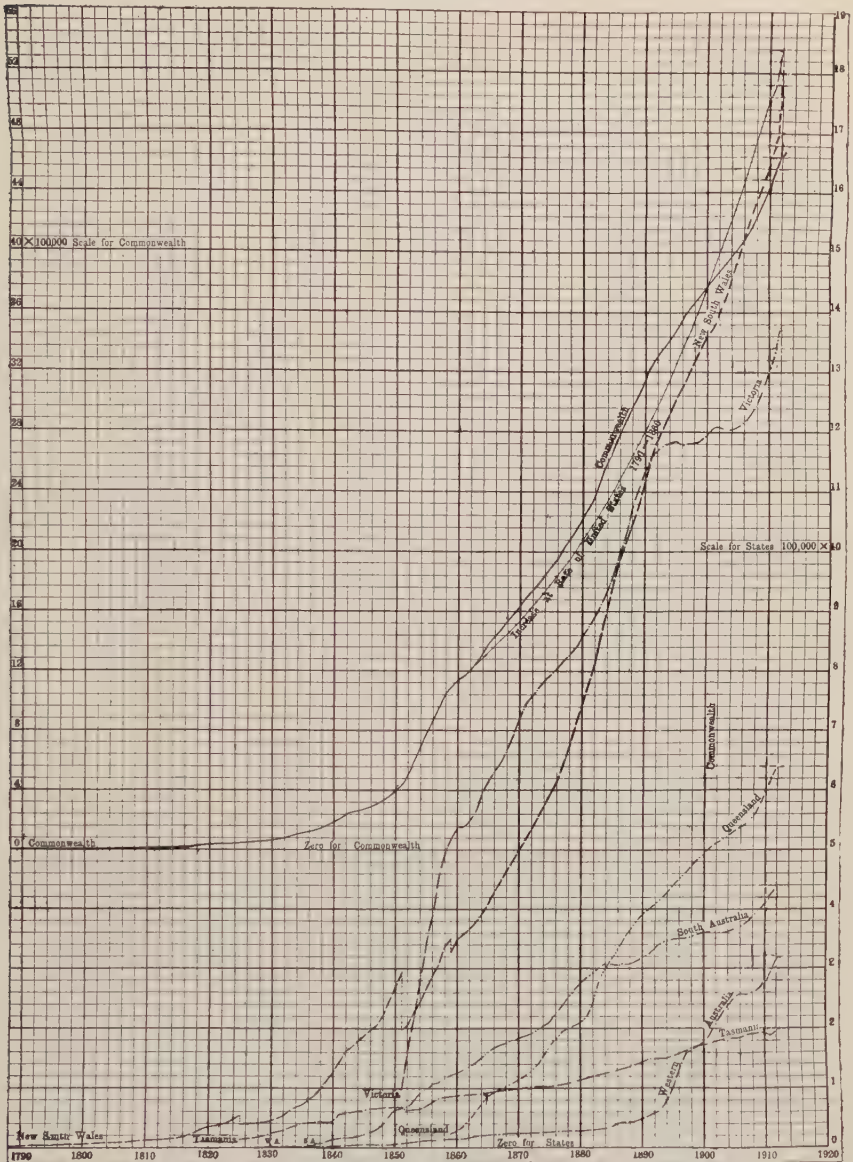
FEMALES.

STATES—							
New South Wales ...	645,022	3,140	650	61	123,808	16,355	789,036
Victoria ...	555,675	2,626	665	66	84,449	16,479	659,960
Queensland ...	225,086	1,272	1,772	252	43,787	4,138	276,307
South Australia ...	165,634	993	531	88	29,987	3,967	201,200
Western Australia ...	96,702	256	317	15	20,724	2,535	120,549
Tasmania ...	74,795	409	30	4	16,235	2,147	93,620
TERRITORIES—							
Northern ...	292	...	37	...	203	44	576
Federal... ..	568	5	...	...	132	17	722
Total Commonwealth ...	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

STATES—							
New South Wales ...	1,341,280	5,705	6,539	558	258,023	34,629	1,646,734
Victoria ...	1,103,428	3,897	4,237	598	173,444	29,947	1,315,551
Queensland ...	490,982	2,403	7,957	930	93,193	10,343	605,813
South Australia ...	335,142	1,549	1,687	190	61,878	8,112	408,558
Western Australia ...	225,350	567	4,688	318	43,248	7,943	282,114
Tasmania ...	151,042	865	211	24	34,479	4,590	191,211
TERRITORIES—							
Northern ...	1,418	4	889	29	845	125	3,310
Federal... ..	1,388	14	2	...	272	38	1,714
Total Commonwealth ...	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

GRAPHS OF TOTAL POPULATION OF THE COMMONWEALTH OF AUSTRALIA
AND EACH STATE THEREIN, 1788-1912.



(See Tables pages 86 to 88.)

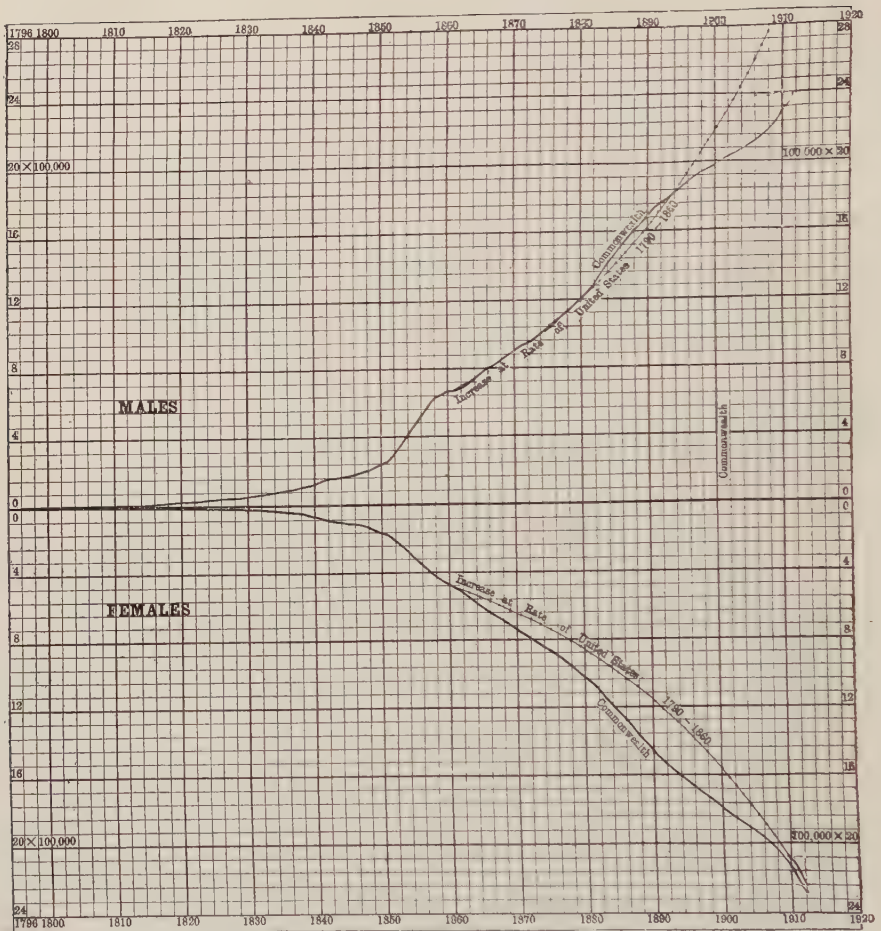
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval for both States and Commonwealth; and the vertical height 80,000 persons for Commonwealth or 20,000 for States. The zero line for the States is the bottom line; for the Commonwealth it is the line marked "Commonwealth." The scale on the left above the Commonwealth zero line relates to the Commonwealth, and that on the right relates to the States.

Where the population falls suddenly the fall denotes the creation of a new colony, *e.g.*, New South Wales 1825, loses the whole population of Tasmania, then erected into a separate colony.

The curves are as follows:—Commonwealth, an unbroken line; New South Wales, — — —; Victoria, — — — —; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —; the names on the curves also shew which State each represents.

The manner in which the population of the Commonwealth would have grown from 1860 to 1912 if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860, is shewn for purposes of comparison.

GRAPHS OF MALE AND FEMALE POPULATIONS, COMMONWEALTH OF AUSTRALIA, 1796-1912.

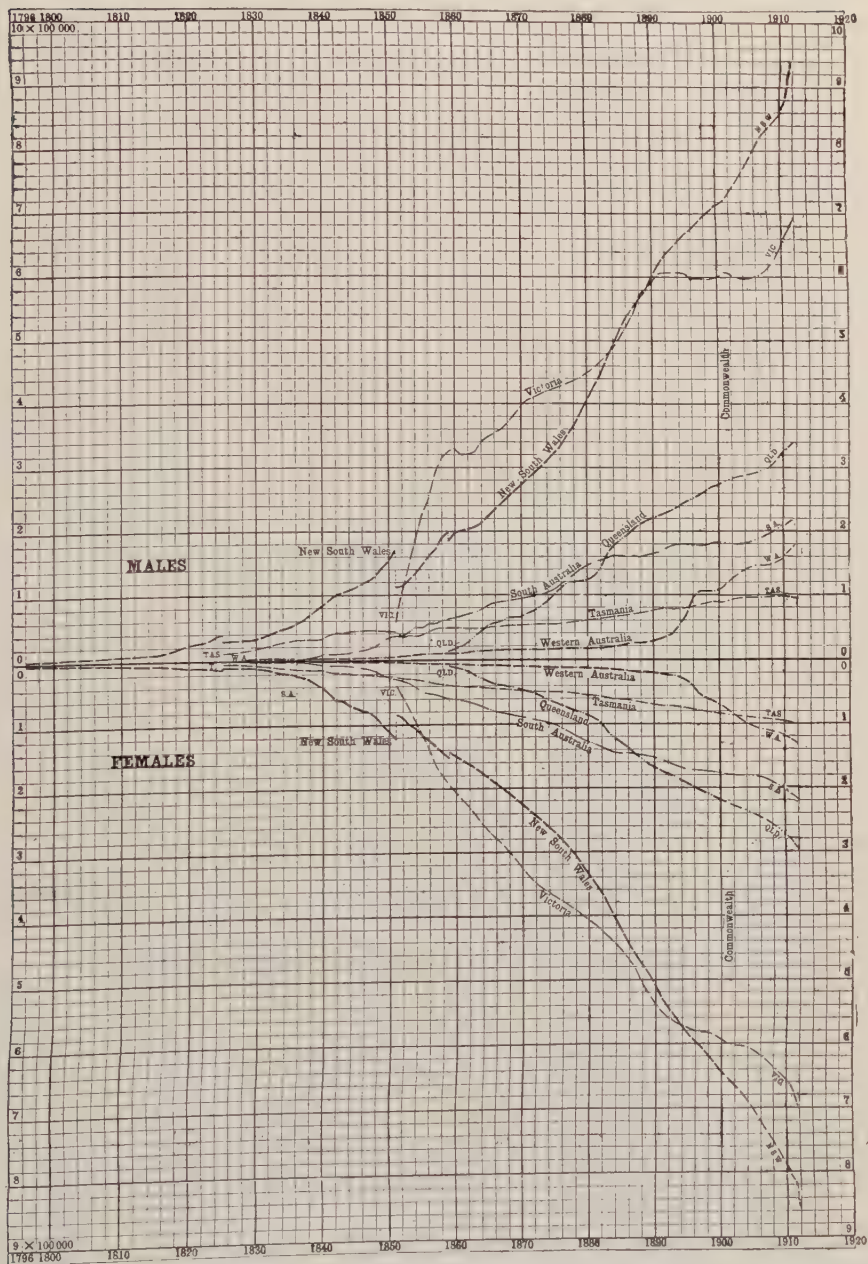


(See Tables pages 86 to 88.)

EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 80,000 persons. The distances upward from the heavy zero line denote the number of males, and downward the number of females. From 1860 onward is shown, for purposes of comparison, the manner in which the numbers of each sex in the Commonwealth would have grown from 1860 to 1908 (1912 for females), if, during that period, there had been in operation the rate of increase actually experienced in the United States from 1790 to 1860.

The asymmetry of the two graphs reveals the want of uniformity in the increase of the two sexes.

129
GRAPHS OF MALE AND FEMALE POPULATION OF THE STATES OF
AUSTRALIA 1796-1912.



(See Tables pages 86 to 88.)

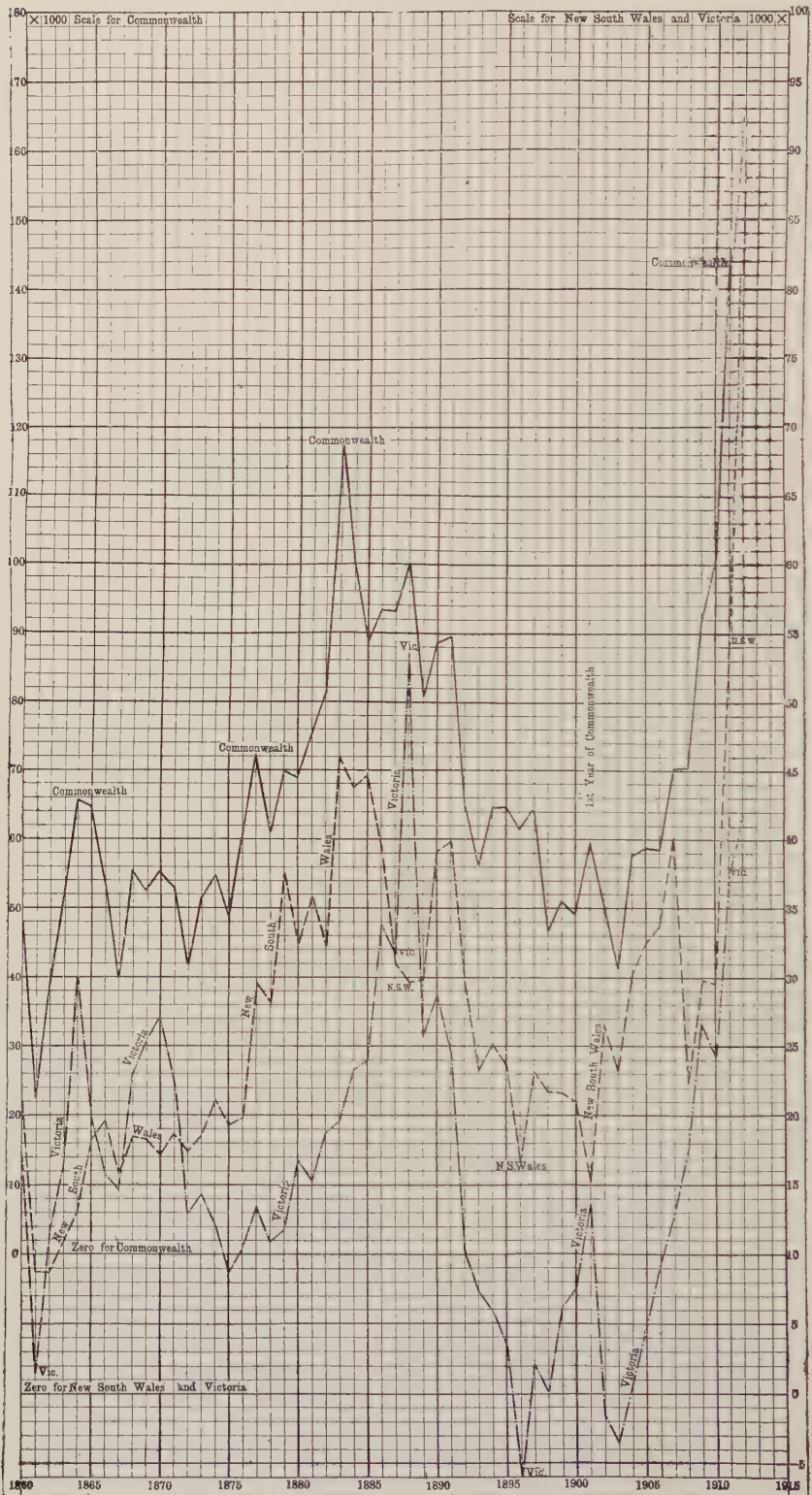
EXPLANATION OF GRAPHS.—The base of each small square represents two years' interval, and the vertical height 20,000 persons. The distances upward from the zero line represent the number of males, and downward the number of females.

The sudden falls denote the creation of new colonies.

The names on the curves denote the States to which they refer, and the curves are as follows:—
New South Wales, ———; Victoria, ———; Queensland, ———; South Australia, ———; Western Australia, ———; Tasmania, ———.

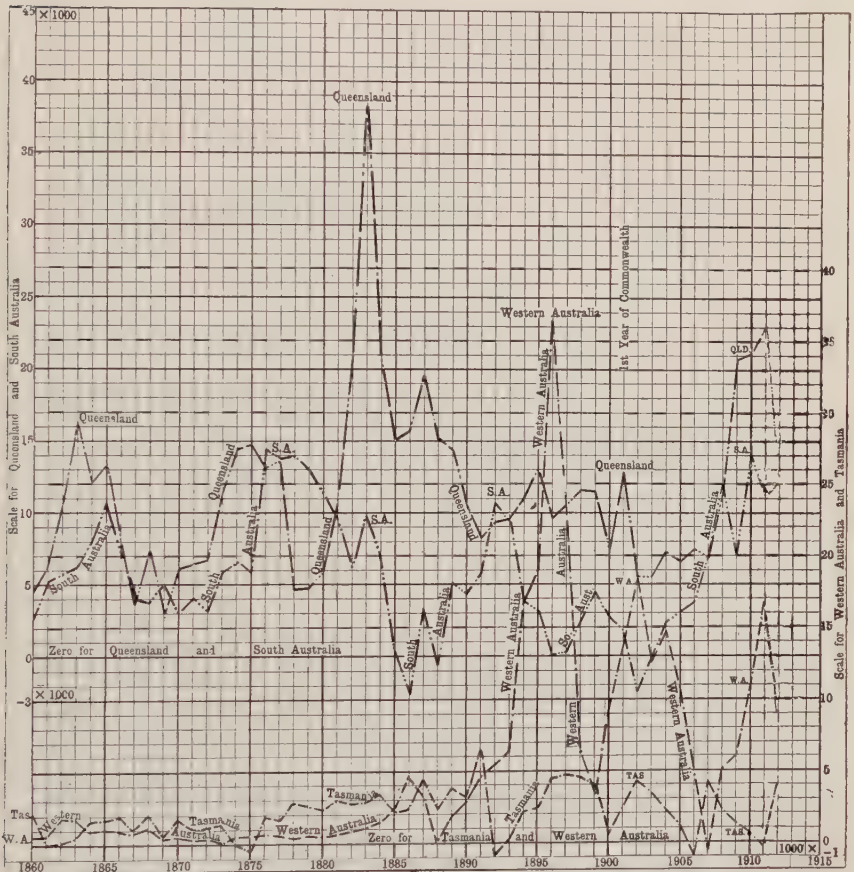
The asymmetry of the two series of graphs reveals the want of uniformity in the increase of the two sexes.

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE COMMONWEALTH OF AUSTRALIA AND THE STATES OF NEW SOUTH WALES AND VICTORIA, 1860-1912.



(For explanation see foot of next page.)

GRAPHS SHEWING NET INCREASE OF POPULATION OF THE STATES OF QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA, AND TASMANIA, 1860-1912.



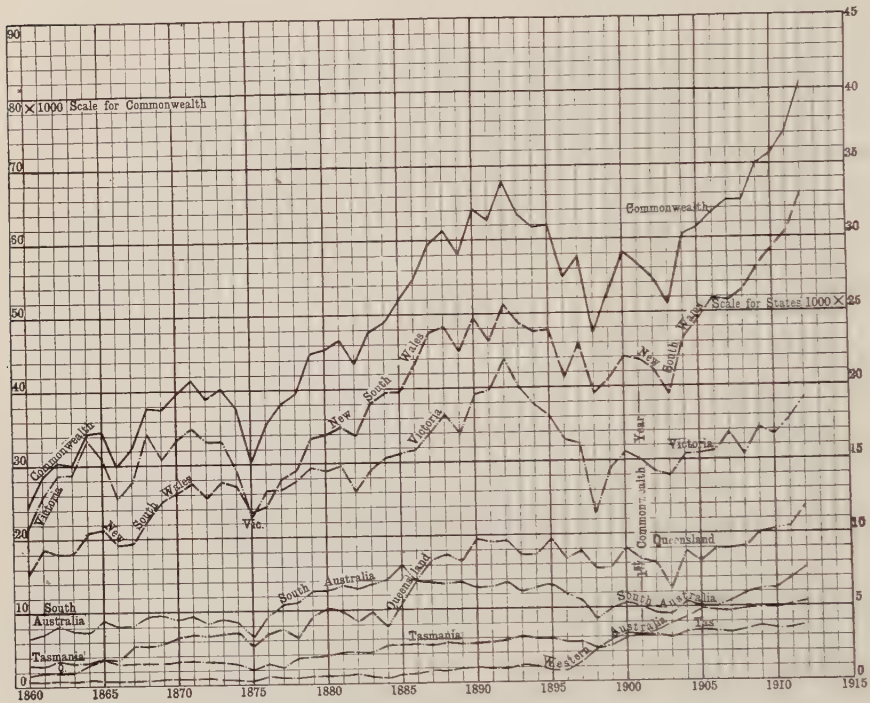
EXPLANATION OF GRAPHS SHEWING NET INCREASE.—The base of each small square represents an interval of a year for both States and Commonwealth; the vertical height represents 2000 for the Commonwealth and 1000 for the States. In the first graph two zero lines are taken (i.) for the Commonwealth and (ii.) for New South Wales and Victoria. The scale on the left relates to the Commonwealth and that on the right relates to New South Wales and Victoria. In the second graph two zero lines are taken (i.) for Queensland and South Australia, and (ii.) for Tasmania and Western Australia. The scale on the left relates to Queensland and South Australia, and that on the right relates to Western Australia and Tasmania.

NET DECREASES in population are shewn by carrying the graph in such cases below the zero line, the distance of the graph below the zero line indicating the extent of the decrease.

The lines used are as follows:—Commonwealth, an unbroken line; New South Wales, — — — —; Victoria, - - - - -; Queensland, - . - . -; South Australia, ...; Western Australia, — — — — —; Tasmania, — — — — —.

The names on the curves denote the States to which they refer.

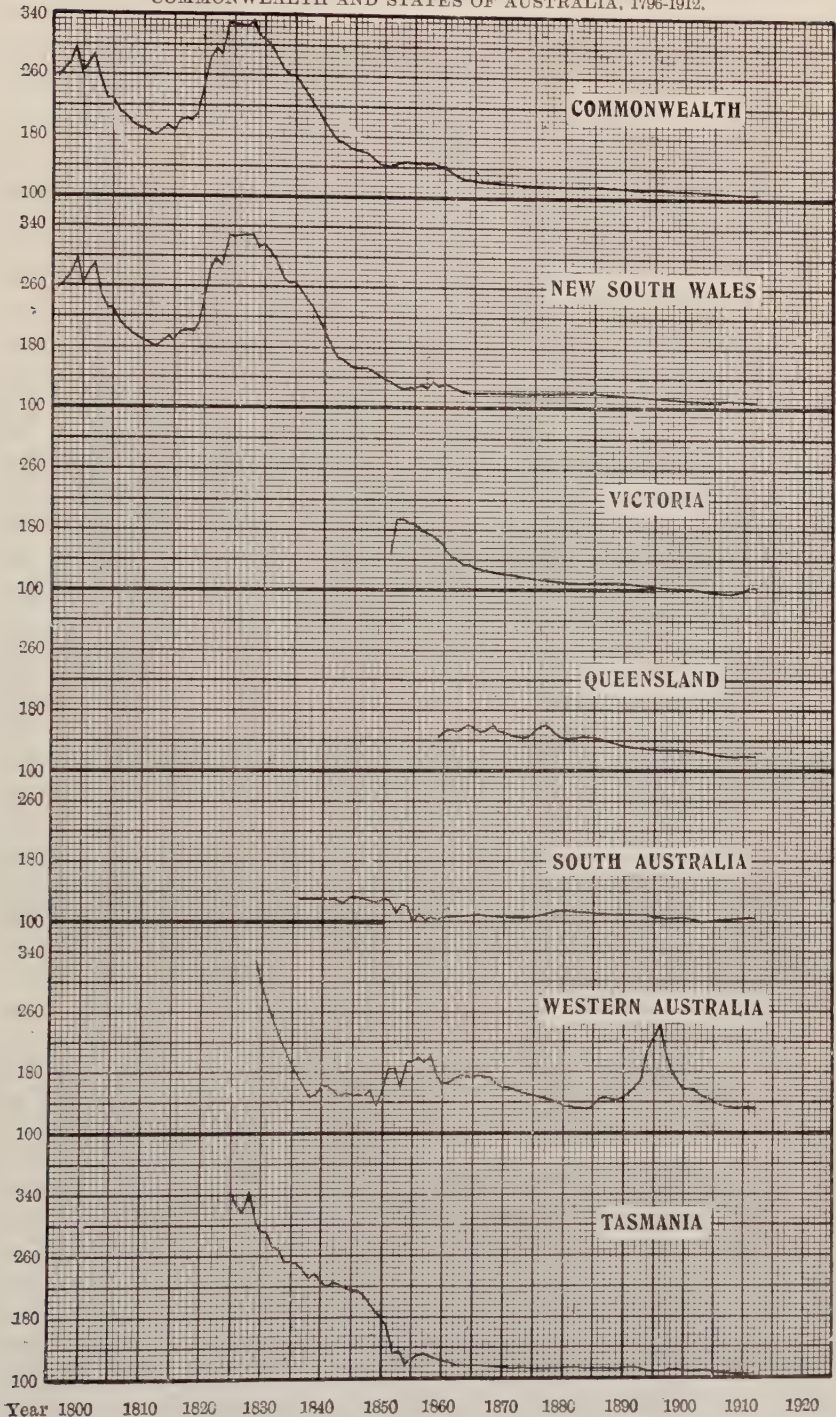
GRAPHS OF NATURAL INCREASE OF THE POPULATION OF THE COMMONWEALTH
AND STATES OF AUSTRALIA, 1860-1912.



EXPLANATION OF GRAPHS.—The base of each small square represents one year for both States and Commonwealth, and the vertical height 1000 persons for the States and 2000 persons for the Commonwealth.

The distances upward from the zero line, marked 0 for both Commonwealth and States, denote the excess of births over deaths. The scale on the left relates to the Commonwealth, and that on the right to the States. The names shew the States to which the curves refer, they are as follows:—Commonwealth —; New South Wales, — — —; Victoria, ...; Queensland, — — — — —; South Australia, — — — — —; Western Australia, — — — — —; Tasmania, — — — — —.

GRAPHS SHEWING MASCULINITY OF THE POPULATION OF THE
COMMONWEALTH AND STATES OF AUSTRALIA, 1796-1912.



Year 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920

(See Tables pages 91 and 96.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year and the vertical height an excess of eight per cent. of males over females. The basic lines (shewn thickened) for Commonwealth and all the States are at 100 per cent., equivalent to a numerical equality of the sexes.

DISTRIBUTION OF POPULATION THROUGHOUT THE COMMONWEALTH OF AUSTRALIA, ACCORDING TO CENSUS OF 1911.

The map on page 135 furnishes a graphic representation of the distribution of the population of the Commonwealth at the date of the census of 1911. For this purpose the density of the population has been computed for the counties of each State, and the areas representing these counties have been shaded in accordance with the following scale of density:—

A—	Less than 1 inhabitant to 16 sq. miles		
B—	From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles		
C—	1 " " 4 " "	1 in 1 sq. mile	
D—	1 " " 1 sq. mile " "	2 in 1 " "	
E—	2 inhabitants in 1 " " "	4 in 1 " "	
F—	4 " " 1 " " "	8 in 1 " "	
G—	8 " " 1 " " "	16 in 1 " "	
H—	16 inhabitants and upwards in 1 square mile		

A map drawn upon such a small scale must, of course, be considered as furnishing only a rough approximation as to the true distribution of the population, owing to the fact that a small densely-populated area may exist in certain cases within a comparatively large district, the balance of which is but sparsely populated. Thus, in such a case, owing to the density of the whole district being alone taken into account, the fact of a concentration of population within a small area is lost for purposes of representation. It is evident that the larger the district is for which the density has been calculated, the less will the map represent the true facts. It is, however, believed that by the calculations being made in each State for counties this feature has been minimised, as the areas of the counties of New South Wales, Victoria, Queensland, South Australia, and Tasmania are fairly equal in area, and do not average much more than 2000 square miles. The areas of counties in the Northern Territory and in Western Australia average 4000 and 8000 square miles respectively. So far as the States of Queensland, Western Australia, and Tasmania are concerned, the map now published cannot be compared with the map contained in previous issues of this Year Book, as the density had been computed for that map for Registration Districts in Queensland, Magisterial Districts in Western Australia, and Electoral Districts in Tasmania.

An area of about 1,136,000 square miles, equal to 38 per cent. of the total area of the Commonwealth, and belonging to South Australia, Western Australia, and the Northern Territory, is not subdivided into counties. As the total population of that area is under 5000, it appears white on the map, together with a considerable number of adjoining counties, in which the population is less than one inhabitant to 16 square miles.

The concentration of population about the capitals, and, to a lesser extent, about some mining and agricultural centres, is obvious on reference to the map. The centres of gravity of the population of the several States and of the Commonwealth as a whole have been ascertained, and are shewn in the map by crosses surrounded by circles. It is evident that the greater the percentage of the population of a State concentrated in the immediate neighbourhood of its capital, the closer to the capital the centre of gravity will be located, and the map shews this plainly. The centre of gravity of the population of the whole Commonwealth lies within the State of New South Wales, in county Nicholson, practically on the parallel of Sydney and the meridian of Melbourne, and almost in the centre of a straight line joining Sydney and Adelaide.



DISTRIBUTION OF POPULATION
OF THE
COMMONWEALTH OF AUSTRALIA
AS AT THE CENSUS OF 1911



From the following table, which gives for the Commonwealth as a whole, particulars of education in conjunction with age, it will be seen that the major portion of those who were unable to read were under the age of 9. Of persons aged 20 and upwards only about 2½ per cent. were unable to read.

**POPULATION OF THE COMMONWEALTH OF AUSTRALIA AT THE CENSUS OF
3rd APRIL, 1911, CLASSIFIED ACCORDING TO EDUCATION AND AGE**

(EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

MALES.

Age.	English Language.		Foreign Language only.		Cannot Read.	Not Stated.	Total.
	Read and Write.	Read only.	Read and Write.	Read only.			
0-4	...	...	...	...	267,411	...	267,411
5-9	177,463	1,131	53	24	39,764	11,151	229,586
10-14	212,935	89	146	9	1,444	1,181	215,804
15-19	221,279	109	800	46	1,813	2,784	226,831
20 and upwards	1,266,625	4,911	20,813	2,062	34,307	32,284	1,361,002
Unspecified ...	7,954	68	396	20	1,318	2,645	12,401
Total	1,886,256	6,308	22,208	2,161	346,057	50,045	2,313,035

FEMALES.

0-4	...	...	...	...	258,222	...	258,222
5-9	173,567	1,116	46	8	36,536	12,387	223,660
10-14	209,904	75	95	6	1,062	1,215	212,357
15-19	218,273	50	101	5	847	2,429	221,705
20 and upwards	1,153,611	7,375	3,735	462	21,819	28,041	1,215,042
Unspecified ...	8,419	85	25	5	889	1,610	10,983
Total	1,763,774	8,701	4,002	486	319,325	45,682	2,141,970

PERSONS.

0-4	...	...	...	...	525,633	...	525,633
5-9	351,030	2,247	99	32	76,300	23,538	453,246
10-14	422,839	164	241	15	2,506	2,396	428,161
15-19	439,552	159	901	51	2,660	5,213	448,536
20 and upwards	2,420,236	12,286	24,548	2,524	56,126	60,325	2,576,045
Unspecified ...	16,373	153	421	25	2,157	4,255	23,384
Total	3,650,030	15,009	26,210	2,647	665,382	95,727	4,455,005

8. School Attendances.—In the following table are set out particulars of school attendances of children aged last birthday from 6 to 13 years at the Census of 3rd April, 1911:—

**SCHOOL ATTENDANCES OF CHILDREN AGED LAST BIRTHDAY FROM 6 TO 13 YEARS
IN THE STATES AND TERRITORIES OF THE COMMONWEALTH OF AUSTRALIA
AT THE CENSUS OF 3RD APRIL, 1911 (EXCLUSIVE OF FULL-BLOODED
ABORIGINALS).**

NOTE —In this and the following table the term "State School" comprises all schools, whether primary or secondary, which are under the direct control of the State.

MALES.

States and Territories	Number being educated at			Number recorded as "scholar," but class of school not stated	Number not indicated as receiving instruction.	Total.
	State School.	Private School.	Home.			
STATES—						
New South Wales ...	91,979	19,107	3,436	3,809	11,574	129,905
Victoria ...	78,185	15,367	1,198	1,826	6,031	102,607
Queensland ...	38,167	5,184	1,517	904	5,089	50,861
South Australia ...	22,817	3,548	521	380	4,409	31,675
Western Australia ...	15,289	3,239	558	508	1,653	21,247
Tasmania ...	11,042	2,113	459	485	2,832	16,931
TERRITORIES—						
Northern ...	32	25	9	1	56	123
Federal ...	98	...	22	4	25	149
Total Commonwealth ...	257,609	48,583	7,720	7,917	31,669	353,498

FEMALES.

STATES—						
New South Wales ...	84,129	23,329	4,191	3,279	12,802	127,730
Victoria ...	73,136	17,447	1,602	1,832	6,493	100,510
Queensland ...	35,656	6,765	1,713	1,032	4,759	49,925
South Australia ...	21,343	4,005	631	762	4,293	31,034
Western Australia ...	13,906	4,015	681	404	1,813	20,819
Tasmania ...	10,267	2,496	594	477	2,501	16,335
TERRITORIES—						
Northern ...	32	20	6	...	69	127
Federal ...	85	3	13	5	27	133
Total Commonwealth ...	238,554	58,080	9,431	7,791	32,757	346,613

PERSONS.

STATES—						
New South Wales ...	176,108	42,436	7,627	7,088	24,376	257,635
Victoria ...	151,321	32,814	2,800	3,658	12,524	203,117
Queensland ...	73,823	11,949	3,230	1,936	9,848	100,786
South Australia ...	44,160	7,553	1,152	1,142	8,702	62,709
Western Australia ...	29,195	7,254	1,239	912	3,466	42,066
Tasmania ...	21,309	4,609	1,053	962	5,333	33,266
TERRITORIES—						
Northern ...	64	45	15	1	125	250
Federal ...	183	3	35	9	52	282
Total Commonwealth ...	496,163	106,663	17,151	15,708	64,426	700,111

9. **Blind Persons and Deaf Mutes.**—The following table contains particulars of the number of blind persons and deaf mutes as recorded at the date of the Census of 1911:—

NUMBER OF BLIND PERSONS AND DEAF MUTES IN THE SEVERAL STATES OF THE COMMONWEALTH

AT THE CENSUS OF 3RD APRIL, 1911 (EXCLUSIVE OF FULL-BLOODED ABORIGINALS).

States.	Blind.			Deaf and Dumb.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
New South Wales ...	591	420	1,011	330	310	640
Victoria ...	595	507	1,102	280	255	535
Queensland ...	213	170	383	160	97	257
South Australia ...	192	166	358	134	112	246
Western Australia ...	85	57	142	40	36	76
Tasmania ...	78	68	146	54	44	98
Total Commonwealth ...	1,754	1,388	3,142(a)	998	854	1,852(a)

(a) Including 21 blind deaf mutes.

§ 11. Naturalisation.

1. **The Commonwealth Act.**—The Commonwealth Constitution empowers the Commonwealth Parliament to make laws with respect to "Naturalisation and Aliens," a power which was exercised when the "Naturalisation Act of 1903" was passed. This Act was assented to on 13th October of that year, and came into force on 1st January, 1904, in accordance with a proclamation by *Gazette* of 14th November, 1903.

Prior to the passing of this Act the issue of certificates of naturalisation had been a function of the State Governments, carried out under Acts of the several State Legislatures, which, however, did not differ materially from each other, and furnished the basis on which the Commonwealth Act was drafted. From 1st January, 1904, when the Commonwealth Act became operative, the right to issue certificates of naturalisation in the Commonwealth has been vested exclusively in the Federal Government, but all certificates or letters of naturalisation issued under the several State Acts prior to that date entitle the recipients to be deemed to be naturalised under the Commonwealth Act.

The grant of a certificate of naturalisation entitles the recipient within the limits of the Commonwealth to all the rights and privileges, and renders him subject to all the obligations, of a natural-born British subject, with the exception that where, by any Commonwealth or State Constitution or Act, a distinction is made between natural-born British subjects and naturalised persons, such distinction shall hold good in the case of all persons naturalised under the Commonwealth Act.

Applications for certificate of naturalisation must be made to the Governor-General, the qualifications required in an applicant being:—

(i.) That he is not a British subject.

(ii.) That he is not an aboriginal native of Asia, Africa, or the Islands of the Pacific, excepting New Zealand.

(iii.) That he intends to settle in the Commonwealth.

- (iv.) (a) That he has resided in Australia continuously for two years immediately preceding naturalisation; or
 (b) That he has obtained in the United Kingdom a certificate or letters of naturalisation.

An applicant who has already obtained a certificate or letters of naturalisation in the United Kingdom is required to furnish, in support of his application—

- (i.) His certificate or letters of naturalisation.
 (ii.) His statutory declaration—
 (a) That he is the person named therein.
 (b) That he obtained the certificate or letters without fraud or intentional false statement.
 (c) That the signature and seal thereto are, to the best of his knowledge and belief, genuine.
 (d) That he intends to settle in the Commonwealth.

If the applicant is not already naturalised in the United Kingdom the particulars which he is required to furnish in support of his application are as follows:—

- (i.) His own statutory declaration stating—
 (a) Name; (b) Age; (c) Birthplace; (d) Occupation; (e) Residence; (f) Length of residence in Australia; (g) Intention to settle in the Commonwealth.
 (ii.) A certificate signed by a Justice of the Peace, a postmaster, a teacher of a State school, or an officer of police, that the applicant is known to him and is of good repute.

In connection with any application for naturalisation, the Governor-General in Council is authorised to grant or withhold a certificate as he thinks most conducive to the public good, but the issue of a certificate to any person who is not already naturalised in the United Kingdom is not admissible until the applicant has taken an oath or affirmation of allegiance. The grant of a certificate is made free of charge.

In addition to naturalisation by grant of certificate, the Act makes provision for—

- (i.) Naturalisation by marriage.
 (ii.) Naturalisation by residence with naturalised parent.

The former relates to the case of a woman who is not herself a British subject, but is married to a British subject; the latter to that of an infant who is not a natural-born British subject, but who has resided at any time in Australia with a father or mother who is a naturalised British subject. In each instance the person concerned is deemed to be naturalised under the Commonwealth Act.

The administration of the Act is carried out by the Department of External Affairs, and the Governor-General is authorised to make such regulations as are necessary or convenient for giving effect to the Act.

2. Statistics of Naturalisation.—Particulars relative to the nationalities of the recipients of certificates of naturalisation issued under the Act during each of the five years 1908 to 1912, and to the countries from which such recipients had come, are shewn in the following table:—

COMMONWEALTH NATURALISATION CERTIFICATES GRANTED, 1908 to 1912.

Nationalities of Recipients.	No. of Certificates Granted.					Countries from which Recipients of Commonwealth Certificates had come.	No. of Certificates Granted.				
	1908.	1909.	1910.	1911.	1912.		1908.	1909.	1910.	1911.	1912.
German ...	475	1,091	694	813	757	Germany ...	381	948	567	676	614
Swedish ...	157	259	181	210	204	Great Britain ...	224	449	346	367	352
Italian ...	132	167	174	210	174	Italy ...	118	146	161	200	160
Russian ...	83	132	135	159	182	America (North)...	74	147	107	140	108
Danish ...	93	182	132	166	123	Denmark ...	66	106	76	100	67
Norwegian ...	65	138	107	103	86	Sweden ...	72	108	71	82	73
Greek ...	33	71	77	87	89	Norway ...	34	62	50	54	43
Austrian ...	45	63	56	76	95	South Africa ...	30	39	57	53	33
French ...	39	81	91	69	59	New Zealand ...	18	55	32	42	33
American (Nth.)	25	76	55	61	43	Greece ...	17	28	28	38	45
Swiss ...	36	70	51	42	39	Russia ...	21	35	40	87	36
Dutch ...	14	28	18	27	36	France ...	31	40	55	36	36
Spanish ...	11	24	24	26	25	Austria ...	23	24	28	29	40
Belgian ...	7	7	14	8	6	Switzerland ...	23	51	43	27	28
Portuguese ...	2	15	13	8	4	Egypt ...	19	31	22	26	55
Rumanian ...	9	3	3	7	4	Spain ...	7	15	18	25	24
Turkish ...	10	10	13	6	10	America (South)	...	...	...	24	19
Brazilian ...	1	5	...	2	1	Belgium ...	15	15	18	18	21
Bulgarian ...	1	1	3	2	3	India ...	...	...	...	13	9
Montenegrin ...	1	...	...	1	1	Pacific Islands ...	...	...	...	13	...
Chilian... ..	...	4	2	1	1	Turkey ...	...	6	7	11	6
Mexican ...	...	1	...	1	...	New Caledonia ...	...	...	...	10	7
South Sea Islds	...	...	...	1	...	Hong Kong ...	...	...	...	7	...
Syrian ...	...	...	...	1	...	Holland ...	...	19	...	6	20
Chinese ...	2	1	1	...	1*	China ...	...	...	10	...	10
Servian ...	...	...	...	...	1	Mauritius ...	...	13	...	...	7
American (Sth.)	...	...	3	...	1	Other Countries...	68	94	113	43	99
Peruvian ...	...	...	1	...	...						
Uruguayan ...	...	...	...	...	...						
Icelandic ...	...	2	1	...	...						
Total ...	1,241	2,431	1,849	2,077	1,945	Total ...	1,241	2,431	1,849	2,077	1,945

* By marriage.

The following table furnishes particulars concerning the States in which the recipients of Commonwealth certificates of naturalisation during the years 1904 to 1912 were resident. The numbers of certificates granted under the several State Acts during the year 1903 are also given :

NATURALISATION CERTIFICATES GRANTED BY STATES AND COMMONWEALTH, 1903 to 1912.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W.A.	Tas.	C'wlth.
1903 ...	400	397	355	43	75	149	1,419
1904 ...	1,379	319	115	25	248	21	2,107
1905 ...	544	213	150	34	166	11	1,118
1906 ...	475	301	177	45	150	39	1,187
1907 ...	458	214	193	27	134	16	1,042
1908 ...	396	243	377	45	152	28	1,241
1909 ...	644	507	378	600	221	81	2,431
1910 ...	665	329	333	299	187	36	1,849
1911 ...	565	491	469	282	248	22	2,077
1912 ...	565	295	464	343	243	35	1,945

3. Census Particulars.—On the Personal Card used at the Census of 3rd April, 1911, an inquiry as to naturalisation was made, all persons who were British subjects by naturalisation being required to indicate the fact by inserting the letter N in the place provided for the purpose on the card. In addition, in checking the cards in the Census Bureau, instructions were given that cases of women naturalised by marriage to British subjects, and of children naturalised by residence with parents who have become British subjects, should be duly taken into account by the insertion of the letter N if originally omitted. The results of the tabulation will be found in the following table:—

NUMBER OF NATURALISED BRITISH SUBJECTS
RECORDED AT THE AUSTRALIAN CENSUS OF 1911.
STATES.

Particulars.	N. S. W.	Victoria	Qld.	S. Aust.	W. Aus.	Tas.	Territories.		C'wlth.
							North- ern.	Federal	
Males ...	11,333	8,445	11,025	4,141	3,544	734	457	4	39,683
Females ...	2,808	2,182	5,562	1,763	646	293	13	1	13,268
Persons ...	14,141	10,627	16,587	5,904	4,190	1,027	470	5	52,951

§ 12. Graphical Representation of Growth of Population.

1. **General.**—The nature of the fluctuations of the numbers representing (a) total population, or those representing (b) births and deaths from year to year, or (c) the natural increase, *i.e.*, the difference of births and deaths, or (d) the net immigration, all of which taken together make up the element of increase of total population, cannot be readily discerned from mere numerical tables. It has been deemed desirable therefore to furnish a series of graphical representations, shewing in some cases the characteristics of these elements from 1788 to 1912, and in others from 1860 to 1912. The graphs furnish at a glance a clear indication of the changes taking place, and of their significance from year to year. The great importance of such representations is that only by their means can the most recent changes be justly apprehended, either in their relation to the past, or their meaning for the future.

2. **Graphs of Total Population** (page 127).—These graphs furnish interesting evidence of the comparatively slow rate of growth of the several States and of the Commonwealth as a whole, during the period from the foundation of settlement in 1788 until 1832. From that year onwards to 1851, a moderately increased rate of progress was experienced. In 1851 gold was discovered in Australia, and the effect of this discovery on the population of the Commonwealth is shewn by the steepness of the curves for New South Wales and Victoria, and also for the Commonwealth, from this point onwards for a series of years. The sudden breaks in the continuity of the curves for New South Wales indicate the creation of new colonies, and their separation from the mother colony. Thus, Tasmania came into existence in 1825, Victoria in 1851, and Queensland in 1859. Owing to the extensive gold discoveries in Victoria, its population increased so rapidly that in 1854 its total passed that of New South Wales, and remained in excess until 1892, when the mother State again assumed the lead, which it has since maintained. The rate of increase in New South Wales is large, but the State is still only sparsely populated. A feature of the New South Wales curve is its comparative regularity as compared with that of Victoria, the population of which State increased with great rapidity from 1851 to 1860, less rapidly from 1861 to 1878, with a further period of increased rapidity from 1878 to 1891, and a period of very slow and fluctuating growth from the latter year to 1912. Victoria, however, has a population density more than double that of Tasmania, and nearly three times that of New South Wales.

In the case of Queensland, the curve indicates a rate of growth which, though varying somewhat, has on the whole been satisfactory, and at times very rapid. Periods of particularly rapid increase occurred from 1862 to 1865, from 1873 to 1877, and from 1881 to 1889. The population of Queensland passed that of Tasmania in 1867, and that of South Australia in 1885. *The population density of Queensland is less than one-sixteenth of that of Victoria.

The curve for South Australia indicates that with fluctuations more or less marked, the population increased at a moderate rate from the date of the foundation of the colony in 1834 until 1884, and that from that point onwards a diminished rate of increase

was experienced. The population of South Australia passed that of Tasmania in 1852. Its density is nearly one and one-fifth of that of Queensland, about one-fifth of that of New South Wales, and about one-fourteenth of that of Victoria.

The curve for Western Australia indicates that the population increased regularly but very slowly until 1886, when the discovery of gold in the Kimberley division caused an influx of population. The effects of the further rich discoveries of gold in the Murchison and Coolgardie districts in 1891 and 1892, are clearly shewn in the rapid increase of population in those and subsequent years to 1897. Two years of retarded progress then occurred, followed by a satisfactorily rapid rate of increase from 1899 to 1906, a slight decline in 1907 and a further advance in 1908 and subsequent years. The population of Western Australia became greater than that of Tasmania in 1899. Its density is little more than one-fourth of that of South Australia, one-third of that of Queensland, one-nineteenth of that of New South Wales, and about one-fiftieth of that of Victoria.

The Tasmanian population curve indicates a comparatively slow rate of growth throughout. Its most noticeable feature is a retardation in increase in 1852 and subsequent years, brought about by the discovery of gold on the mainland. The population density of Tasmania is about 30 per cent. greater than that of New South Wales, and a little less than half of that of Victoria.

3. Graphs for Commonwealth of Male and Female Population (page 128).—These curves shew the relative growth of male and female population of the Commonwealth, and it will be seen that the former are far more liable to marked fluctuations than the latter. The curves representing an increase of population on the basis of the United States rate for 1790 to 1860, indicate that on the whole the female rate of increase in the Commonwealth has been a fairly satisfactory one, and that from 1860 to 1893 the same might be said of the male population. From 1893 onwards, however, the male population of the Commonwealth has fallen considerably below this rate, and it may be added that the rapid lowering of the rate of increase of the male population must be regarded as unsatisfactory from a national standpoint.

Although the rate of increase of the female population from 1860 onwards is on the whole very satisfactory, it should be noted that the total number at the beginning of this period was relatively very small, and that from 1894 there is an unsatisfactory falling off in the rate of increase, similar to that experienced in the case of males.

4. Graphs for each State of Male and Female Population (page 129).—These graphs, shewing the relative progress in male and female population for each of the States, disclose the fact that in all cases the female population is much less liable to marked fluctuations than the male, and further, that in cases where rapid increases have taken place in the latter, a similar, but much more gradual, increase is in evidence in the former, commencing usually, however, somewhat later than in the case of the males. A comparison of the graphs of each of the States with that of the Commonwealth shews that the fluctuations in the latter case are smaller than in the former. This is largely due to internal migrations of the male element of the population, brought about by various causes, amongst which mining developments figure prominently.

5. Graphs for Natural Increase of Population, Commonwealth and States (page 132).—The graphs indicate that, with the exception of certain marked variations, the natural increase of the population of the Commonwealth, i.e., the excess of births over deaths, advanced with fair rapidity from 1860 to 1892, in which year it attained its maximum, and then fell rapidly till 1898. A subsequent rise to 1900 was followed by a continuous fall for the three years succeeding, viz., to 1903. The recovery shews a fairly rapid rise to 1909, during which year the natural increase was 16.35 per 1000 of mean population. In succeeding years a correspondingly high rate was maintained with minor fluctuations until 1912, when a record of 17.42 was obtained. This latter figure is, however, an over-statement of the true natural increase, owing to the fact that the introduction of "Maternity Allowances" in 1912 resulted in expediting the registration of births. The years in which the natural increase of the Commonwealth was at its highest were 1865, 1871, 1881, 1892, 1900, 1909, and 1912, and the years

of extraordinarily low rates of natural increase were 1866, 1875, 1882, 1898, and 1903. The low rate of 1898 was due in large measure to a phenomenally high death rate experienced in practically all the States in that year, when an epidemic of measles was prevalent throughout the Commonwealth. The low rate of 1903 was brought about by the low birth rates and the high death rates which accompanied the drought of 1902-3, while the advance in the rate of natural increase since 1903 has been collateral with the marked improvement in material conditions experienced throughout the Commonwealth during that period.

6. Graphs shewing Net Increase of Population (pages 130 and 131).—The graphs disclose the fact that the most notable years of large net increases of population of the Commonwealth as a whole were 1864, 1877, 1888, 1889, 1909, 1910, 1911 and 1912. The highest increase was attained in 1912. The net increase for 1910 was higher than for any year since 1883, while that for 1912 was the highest on record. The years in which low net increases were noticeable were 1861, 1867, 1872, 1878, 1889, 1893, 1898, and 1903.

The graph for New South Wales indicates a high net increase of population between 1876 and 1894, advancing to a maximum in 1883, and then declining to 1901. From the latter year onwards to 1907 an advance in the net increase was in evidence, followed by a decline in 1908, and a recovery in 1909, which was maintained in subsequent years.

Some features of the graph shewing the Victorian net increase are the height attained in 1864, 1870, 1888, 1901, and 1912, the smallness of the increase for the years 1861 and 1875, and the decreases for 1896, 1902, and 1903.

For Queensland it will be seen that the years of high net increases were 1863, 1875, 1883, 1895, 1901, 1909, 1910, and 1911, while the years in which these were at very low level were 1869, 1878, 1891, and 1903.

In South Australia the net increases were exceptionally high in 1865, 1876, 1883, 1892, 1908, 1910, 1911, and 1912, and correspondingly low in 1870, 1885, 1896, and 1903, while actual decreases took place in 1886, 1888, and 1902.

In Western Australia the net increase graph indicates no very marked advance until about 1884, from which it rises somewhat rapidly to 1886, and then declines to 1888. This is followed by an exceedingly rapid rise to 1896, and a subsequent fall to 1899, succeeded by a further rise to 1902, and a fall thereafter to 1907, followed by a rise to 1911 and a further fall in 1912. Decreases took place in 1883 and 1907.

In the case of the Tasmanian graph, indications of a very varied net increase are in evidence, the principal high points being those for the years 1887, 1891, 1897, 1902, 1907, and 1912, while actual decreases were experienced in 1874, 1875, 1892, 1906, and 1911.

7. Graphs shewing Masculinity of Population, Commonwealth and States (page 133).—These graphs furnish information concerning the variations which have taken place in the relative numbers of males and females in the populations of the Commonwealth and the several States during the years 1796 to 1912, and incidentally serve to indicate special features of growth in the respective populations. In general it will be noted that in recent years there has been a marked tendency towards a masculinity of 100, that is, to a condition in which the numbers of males and females in the population were equal, but that with the exception of Victoria and South Australia the masculinity has never fallen below 100. The early experience of the Commonwealth exhibits a fairly rapid decline in masculinity to 1812, followed by an even more rapid rise to 1828 and a subsequent fall with more gentle slope to 1850. From 1850 onwards the decline in masculinity has been fairly continuous though subject to fluctuations. It should be noted that the marked variations of the earlier as compared with the later years have been due to a considerable extent to the fact that, owing to the smallness of the population, any considerable influx of male immigrants had a marked effect in increasing the masculinity of the population, while an influx of female immigrants tended to considerably reduce it. Two points of special interest in the graphs of the separate States are the maxima attained in 1852 in Victoria and 1896 in Western Australia, as the result of extensive male immigration consequent on the gold discoveries in the respective States.

SECTION V.

VITAL STATISTICS.

NOTE.—The rates quoted throughout this Section for the years 1902 to 1912 have been calculated in accordance with the corrected populations as determined by the results of the Census of 1911.

§ 1. Births.

1. Male and Female Births, 1902 to 1912.—The total number of male and female births registered in the Commonwealth during the years 1902 to 1912 is as shewn in the two tables hereunder:—

TOTAL MALE BIRTHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	C'wealth.
1902	19,322	15,583	7,279	4,579	3,241	2,604	8	...	52,616
1903	18,377	15,115	6,427	4,464	3,433	2,570	20	...	50,406
1904	19,857	15,313	7,134	4,665	3,666	2,702	21	...	53,358
1905	20,206	15,523	6,978	4,491	3,862	2,812	23	...	53,895
1906	21,066	15,716	7,280	4,605	4,043	2,792	12	...	55,514
1907	21,604	15,986	7,451	4,675	3,962	2,797	14	...	56,489
1908	21,605	16,071	7,677	4,924	3,993	2,818	25	...	57,113
1909	22,464	16,096	7,954	5,224	3,884	2,849	11	...	58,482
1910	23,368	16,412	8,260	5,395	3,855	2,888	28	...	60,206
1911	24,383	16,934	8,703	5,615	4,124	2,716	16	(a) 17	62,508
1912	26,524	18,226	9,576	6,168	4,469	3,016	23	20	68,022

(a) Part of New South Wales prior to 1911.

TOTAL FEMALE BIRTHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Territory.	C'wealth.
1902	18,518	14,878	6,937	4,348	2,991	2,481	12	...	50,160
1903	17,589	14,454	6,194	4,011	3,266	2,510	13	...	48,037
1904	18,810	14,450	6,948	4,435	3,510	2,590	12	...	50,755
1905	19,295	14,584	6,648	4,341	3,720	2,445	13	...	51,046
1906	19,882	15,128	6,739	4,316	3,757	2,541	13	...	52,376
1907	20,597	15,379	7,089	4,536	3,750	2,494	13	...	53,858
1908	20,853	15,026	7,153	4,832	3,762	2,797	9	...	54,432
1909	21,318	15,448	7,598	4,840	3,718	2,651	16	...	55,589
1910	22,076	15,025	7,909	5,145	3,730	2,698	12	...	56,595
1911	23,154	16,092	8,281	5,442	3,967	2,721	15	(a) 13	59,685
1912	25,337	17,570	9,162	5,911	4,220	2,837	10	19	65,066

(a) Part of New South Wales prior to 1911.

2. Total Births, 1902 to 1912.—While the total number of births for the Commonwealth was higher in 1912 than in any of the preceding ten years, the following table of particulars discloses also the fact that the excess of births in 1912 over those in 1902 was very unequally distributed between the States:—

TOTAL BIRTHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
1902 ...	37,835	30,461	14,216	8,927	6,232	5,085	20	...	102,776
1903 ...	35,966	29,569	12,621	8,475	6,699	5,080	33	...	98,443
1904 ...	38,667	29,763	14,082	9,100	7,176	5,292	33	...	104,113
1905 ...	39,501	30,107	13,626	8,832	7,582	5,257	36	...	104,941
1906 ...	40,948	30,844	14,019	8,921	7,800	5,333	25	...	107,890
1907 ...	42,201	31,365	14,540	9,211	7,712	5,291	27	...	110,347
1908 ...	42,458	31,097	14,830	9,756	7,755	5,615	34	...	111,545
1909 ...	43,782	31,544	15,552	10,064	7,602	5,500	27	...	114,071
1910 ...	45,444	31,437	16,169	10,540	7,585	5,586	40	...	116,801
1911 ...	47,537	33,026	16,984	11,057	8,091	5,437	31	(a) 30	122,193
1912 ...	51,861	35,796	18,738	12,079	8,689	5,853	33	39	133,088

(a) Part of New South Wales prior to 1911.

3. *Birth Rates, 1902 to 1912.*—(i.) *Crude Birth Rate.* The birth rate for the whole Commonwealth during 1911 was higher than in any of the preceding ten years, an uninterrupted increase having been experienced since 1907. The increase shewn by the 1912 figures over those of 1911 is, however, to some extent fictitious. The law relating to Maternity Allowances which came into force on 10th October, 1912, had the effect of materially diminishing the period between the dates of birth and the dates of registration, so that probably about 6000 births were registered during the last three months of the year which, under ordinary circumstances, would not have been registered before the beginning of 1913. The very high masculinity of the population accounts for the low birth rate experienced in the Northern Territory:—

CRUDE BIRTH RATE (a), COMMONWEALTH, 1902 to 1912 (b).

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	North. Terr.	Federal.	Cwlth.
1902 ...	27.23	25.23	27.85	25.08	30.44	29.03	4.37	...	26.71
1903 ...	25.44	24.53	24.53	23.84	30.50	28.16	7.58	...	25.29
1904 ...	26.85	24.74	26.99	25.49	30.67	28.92	7.82	...	26.41
1905 ...	26.85	24.96	25.76	24.54	30.74	28.50	8.72	...	26.23
1906 ...	27.21	25.41	26.15	24.57	30.66	28.94	6.29	...	26.57
1907 ...	27.34	25.59	26.79	25.05	30.18	28.63	7.06	...	26.76
1908 ...	26.99	25.07	26.79	25.81	30.08	29.95	9.30	...	26.59
1909 ...	27.40	25.01	27.29	25.91	28.87	28.91	7.63	...	26.69
1910 ...	27.83	24.51	27.33	26.50	27.99	29.25	11.75	...	26.73
1911 ...	28.60	25.01	27.65	26.89	28.21	28.57	9.34	(d) 16.85	27.21
1912 ...	29.86	26.39	29.67	28.65	28.83	30.53	9.82	19.15	28.65
Density (c) (No. per square mile) ...	5.74	15.71	0.95	1.13	0.31	7.52	0.007	2.13	1.59

(a) Number of births per 1,000 of the mean annual population. (b) Rates corrected in view of Census Returns, 1911. (c) On 31st December, 1912. (d) Part of New South Wales prior to 1911.

The population density of each State and of the Commonwealth has been given for the purpose of considering the influence, if any, of concentration of population on birth rate, in connection with the disparities of the rate in different parts of Australia.

(ii.) *Objections to Crude Birth Rate.* The figures just given represent the "crude birth rate," i.e., the number of births per thousand of mean annual population. The number of births per thousand of the female population of child-bearing ages, i.e., from 15 to 45, furnish a more significant rate. This calculation has been made for the four last Census periods, and covers in each case the Census year together with the year immediately preceding and the year immediately following. The following results have been obtained for the four Census periods:—Total births per 1000 women (married and unmarried) of ages 15 to 45:—Years 1880-82, 169.69; years 1890-92, 158.81; years

1900-02, 117.26; years 1910-12, 117.22. Nuptial births per 1000 married women of ages 15 to 45:—Years 1880-82, 320.96; years 1890-92, 332.03; years 1900-02, 235.84; years 1910-12, 236.06.

4. **Birth Rates of Various Countries.**—A comparison with other countries shews that the Australian States occupy a very low position, which is, however, fortunately counterbalanced by a still lower position in regard to their death rates, as will be seen from the table hereinafter in the section dealing with "Deaths."

CRUDE BIRTH RATE (a) OF VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
● Russia, European ...	1905	44.8	Commonwealth ...	1912	28.7
Rumania ...	1911	43.0	South Australia ...	1912	28.7
Bulgaria ...	1908	40.4	German Empire ...	1911	28.6
Jamaica ...	1911	39.0	Netherlands... ..	1911	27.8
Chile ...	1911	38.5	Denmark ...	1911	26.8
Ceylon ...	1911	37.9	New Zealand ...	1912	26.5
Servia ...	1911	36.2	Victoria ...	1912	26.4
Hungary ...	1911	35.0	Norway ...	1911	25.9
Japan ...	1909	34.2	Scotland ...	1911	25.6
Italy ...	1911	31.5	Switzerland ...	1910	25.0
Austria ...	1911	31.4	United Kingdom ...	1911	24.4
Spain ...	1911	31.2	England and Wales ...	1911	24.4
Tasmania ...	1912	30.5	Sweden ...	1911	23.8
New South Wales ...	1912	29.9	Belgium ...	1910	23.7
Queensland ...	1912	29.7	Ireland ...	1911	23.2
Prussia ...	1911	29.4	Canada (Ontario) ...	1911	21.7
Finland ...	1911	29.1	France ...	1911	18.7
Western Australia ...	1912	28.8			

(a) Number of births per 1000 of the mean population.

5. **Masculinity at Birth.**—The masculinity of births, *i.e.*, the number of males per 100 females, registered during the last eleven years in the several States of the Commonwealth has, apart from the Northern Territory, the figures for which are useless for comparative purposes on account of the smallness of the returns on which they are based, varied from 99.82 in Tasmania in 1911 to 115.01 in Tasmania in 1905. The following table, which gives the values for the States and Commonwealth for 1902 to 1912, shews the remarkable fact that for the Commonwealth there was a steady increase of masculinity from 1902 to 1906, with a sharp decrease in 1907, a further increase in 1908, 1909, 1910, and a rapid decrease in 1911 and 1912:—

MASCUILITY (a) OF BIRTHS REGISTERED, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	Northern Territory.	Federal Territory.	Commonwealth.
1902 ...	104.37	104.74	104.93	105.31	108.36	104.96	66.67	...	104.90
1903 ...	104.48	104.57	103.76	111.29	105.11	102.39	153.85	...	104.93
1904 ...	105.57	105.97	102.68	105.19	104.44	104.32	175.00	...	105.13
1905 ...	104.72	106.44	104.96	103.46	103.82	115.01	176.92	...	105.58
1906 ...	105.96	103.89	108.03	106.70	107.61	109.88	92.31	...	105.99
1907 ...	104.89	103.95	105.11	103.06	105.65	112.15	107.69	...	104.89
1908 ...	103.61	106.95	107.33	101.90	106.14	100.75	277.78	...	104.93
1909 ...	105.38	104.19	104.69	107.93	104.46	107.47	68.75	...	105.20
1910 ...	105.85	109.23	104.44	104.86	103.35	107.04	233.33	...	106.38
1911 ...	105.31	105.23	105.10	103.18	103.96	99.82	106.67	(b) 130.77	104.73
1912 ...	104.68	103.73	104.52	104.35	105.90	106.31	230.00	105.26	104.54

(a) Number of males to each 100 females.

(b) Part of New South Wales prior to 1911.

There is ordinarily a very small difference between the masculinity of nuptial and ex-nuptial births. Thus, according to Bodio, whose figures are quoted in the following

table, for the period about 1887-1891, the masculinity ranged from 108.3 to 103.6, and from 107.9 to 101.6 for total and ex-nuptial births respectively.

MASCULINITY OF BIRTHS IN VARIOUS COUNTRIES.

Country.	Masculinity of Births. (a)		Country.	Masculinity of Births. (a)	
	All Live Births.	Ex-nuptial Live Births.		All Live Births.	Ex-nuptial Live Births.
Spain ...	108.3	107.9	German Empire ...	105.2	104.7
Rumania ...	107.7	103.4	Finland ...	105.0	105.2
Portugal ...	107.5	106.4	Hungary ...	105.0	102.9
Austria ...	105.8	105.5	Sweden ...	105.0	104.3
Italy ...	105.8	104.4	Denmark ...	104.8	105.0
Norway ...	105.8	105.9	Servia ...	104.7	103.5
Ireland ...	105.5	104.8	France ...	104.6	102.9
Netherlands ...	105.5	104.7	Belgium ...	104.5	102.2
Scotland ...	105.5	105.9	Switzerland ...	104.5	101.6
Russia, European ...	105.4	104.5	England ...	103.6	104.4

(a) Number of males to each 100 females.

The masculinity of ex-nuptial births in the Commonwealth was as follows:—

MASCULINITY (a) OF EX-NUPTIAL BIRTHS REGISTERED, COMMONWEALTH, 1902 TO 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Territ'y.	Federal Territ'y.	C'wlth.
1902 ...	103.67	106.78	100.23	106.91	111.11	93.17	...	...	103.96
1903 ...	97.79	114.83	95.22	100.00	114.29	122.66	...	...	104.10
1904 ...	100.80	108.68	95.77	83.50	107.28	93.71	200.00	...	100.98
1905 ...	102.50	102.52	105.63	96.94	98.75	102.80	...	...	102.44
1906 ...	103.10	102.23	104.17	116.97	118.13	124.82	100.00	...	105.44
1907 ...	104.91	105.59	100.90	113.56	115.94	100.00	...	...	105.11
1908 ...	108.60	105.38	96.83	96.82	89.33	108.51	150.00	...	104.00
1909 ...	105.46	102.16	103.90	105.37	129.14	129.01	66.67	...	106.25
1910 ...	104.96	103.59	100.39	101.33	89.70	106.94	200.00	...	103.05
1911 ...	101.73	106.61	97.94	106.19	108.05	105.67	28.57	(b)	103.10
1912 ...	109.83	95.98	97.30	120.85	124.40	82.69	200.00	...	104.05

(a) Number of males to each 100 females. (b) Part of New South Wales prior to 1911.

It is curious to note that while, so far as the total births are concerned, there has always been an excess of male births over female births (excepting Tasmania in 1911), this has not been the case in regard to ex-nuptial births, where in South Australia in 1904 the masculinity was only 83.50. On the other hand it rose as high as 129.14 in Western Australia in 1909. Little weight, however, can be attached to these results on account of the small totals on which they are based, and for the same reason the figures for the Northern Territory are not taken into consideration.

6. Ex-nuptiality of Births.—The total ex-nuptial births fell from 1902 to 1903, then rose rapidly to 1908 and remained almost stationary till 1909, when the number again decreased. The total for 1910 was the lowest number recorded since 1906. (See the table on the following page).

It is, of course, possible that the number of ex-nuptial births is somewhat understated, owing to diffidence in proclaiming the fact of ex-nuptiality, and it is not unlikely that the majority of unregistered births are ex-nuptial.

TOTAL EX-NUPTIAL BIRTHS REGISTERED IN THE COMMONWEALTH, 1902 TO 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
1902 ...	2,497	1,677	859	389	247	311	...	...	5,980
1903 ...	2,413	1,695	857	354	315	285	...	...	5,919
1904 ...	2,755	1,707	971	364	313	308	3	...	6,421
1905 ...	2,912	1,689	950	381	318	290	1	...	6,545
1906 ...	2,882	1,721	1,076	356	373	308	2	...	6,718
1907 ...	2,920	1,764	1,117	378	298	306	...	...	6,783
1908 ...	2,887	1,793	1,118	435	337	294	5	...	6,867
1909 ...	2,821	1,870	1,097	421	346	300	5	...	6,860
1910 ...	2,853	1,759	1,034	455	313	298	9	...	6,721
1911 ...	2,921	1,969	1,057	466	362	290	9	(a)...	7,074
1912 ...	2,904	2,046	1,170	572	377	285	3	1	7,358

(a) Part of New South Wales prior to 1911.

(i.) *Rate of Ex-nuptiality, 1902 to 1912.* The rate of ex-nuptiality, i.e., the percentage of ex-nuptial to total births, shews on the whole a slight increase from 1902 to 1905, with a decrease during the last seven years, as the subjoined table shews:—

PERCENTAGE OF EX-NUPTIAL ON TOTAL BIRTHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed'l Terr.	C'wealth.
	%	%	%	%	%	%	%		%
1902 ...	6.60	5.51	6.04	4.36	3.96	6.12	...	...	5.82
1903 ...	6.71	5.73	6.79	4.18	4.70	5.61	...	...	6.01
1904 ...	7.12	5.74	6.90	4.00	4.36	5.82	9.09	...	6.17
1905 ...	7.37	5.61	6.97	4.36	4.19	5.52	2.78	...	6.24
1906 ...	7.04	5.58	7.68	3.99	4.78	5.78	8.00	...	6.23
1907 ...	6.92	5.62	7.68	4.10	3.86	5.78	...	...	6.15
1908 ...	6.80	5.77	7.54	4.44	4.35	5.24	14.71	...	6.16
1909 ...	6.44	5.94	7.05	4.18	3.95	5.45	18.52	...	6.01
1910 ...	6.28	5.60	6.39	4.32	4.13	5.33	22.50	...	5.75
1911 ...	6.14	5.96	6.22	4.21	4.47	5.33	29.03	(a)...	5.79
1912 ...	5.60	5.72	6.24	4.74	4.34	4.87	9.09	2.56	5.53

(a) Part of New South Wales prior to 1911.

A comparison of greater significance is obtained by calculating the number of ex-nuptial births per thousand of the single and widowed female population between the ages of 15 and 45. The calculation has been made for the last four Census periods, and covers in each case the Census year, together with the year immediately preceding and the year immediately following. The number of ex-nuptial births per 1000 unmarried women of ages 15 to 45 has been found to be as follows:—Years 1880-82, 14.49; years 1890-92, 15.93; years 1900-02, 13.30; years 1910-12, 12.53.

(ii.) *Comparison of Rates.* Since the rate of ex-nuptiality might appear to increase by the mere decrease in the general birth rate, the following table has been prepared:—

CRUDE EX-NUPTIAL, NUPTIAL AND TOTAL BIRTH RATES, (a), COMMONWEALTH, 1902 TO 1912 (b).

Births.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Ex-nuptial	1.55	1.52	1.63	1.64	1.65	1.64	1.64	1.60	1.54	1.57	1.58
Nuptial ...	25.16	23.77	24.78	24.59	24.92	25.12	24.95	25.09	25.19	25.64	27.07
Total ...	26.71	25.29	26.41	26.23	26.57	26.76	26.59	26.69	26.73	27.21	28.65

(a) Number of births per 1000 of mean population.

(b) Rates corrected in view of Census Returns, 1911.

(iii.) *Ex-nuptiality—Rates of Various Countries.* The rate for the Commonwealth is higher than that for England and Wales, slightly lower than that for Scotland, and considerably below the rates for many of the countries for which returns are available, as the table hereunder shews. The rates shewn below refer to three triennial periods, 1880-2, 1890-2, and 1900-2, and are given per thousand of the unmarried and widowed female population:—

EX-NUPTIAL BIRTHS PER THOUSAND OF UNMARRIED AND WIDOWED FEMALE POPULATION IN VARIOUS COUNTRIES.

Country.	Rate.			Country.	Rate.		
	1880-2.	1890-2.	1900-2.		1880-2.	1890-2.	1900-2.
	%	%	%		%	%	%
Ireland ...	4.4	3.9	3.8	Belgium ...	20.0	20.6	17.8
Netherlands ...	9.7	9.0	6.8	France ...	17.6	17.7	19.1
England and Wales ...	14.1	10.5	8.5	Italy ...	25.4	...	19.4
New Zealand ...	13.4	9.0	8.9	Russia ...	25.8	25.1	23.7
Switzerland ...	10.8	10.0	9.8	Denmark ...	26.9	24.5	24.2
Commonwealth ...	14.5	15.9	13.3	Sweden ...	22.6	22.9	24.3
Scotland ...	21.4	17.1	13.4	German Empire ...	29.6	28.7	27.4
Spain ...	16.0	17.5	15.5	Austria ...	43.4	42.7	40.1
Norway ...	19.7	16.9	17.2				

It may be added that the general circumstances in Australia with regard to opportunity for marriage are probably relatively easy as compared with those in older established countries.

7. Multiple Births.—Among the total number of 133,088 births registered in the Commonwealth in 1912 there were 130,373 single births, 2664 twins, and 48 triplets. The number of cases of twins was 1334, four children being still-born, and the number of cases of triplets 16. The total number of mothers was, therefore, 131,725, the proportion of mothers of twins being one in every 99, and of mothers of triplets one in every 8233 of total mothers. The proportion of multiple births is a fairly constant one. In 1907 they numbered 1043 out of a total of 109,306, or one in 105; in 1908, 1065, or one in 104; in 1909, 1142, or one in 99; in 1910, 1189, or one in 99, in 1911, 1236, or one in 98, and in 1912, 1350, or one in 98. The number of cases of triplets is so small that a slight alteration in the total will completely change the proportion. Thus, there were 14 cases in 1907, or one in 7872 of total mothers, as compared with one in 18,415 in 1908; one in 8066 in 1909, one in 8893 in 1910, one in 8639 in 1911, and one in 8233 in 1912.

8. Ages of Parents.—The relative ages of the parents of children registered in 1912 have been tabulated, twins and triplets being distinguished from single births, and are shewn for single ages and for every State in "Bulletin of Population and Vital Statistics, No. 30; Commonwealth Demography, 1912 and previous years." In the present work the exigencies of space allow only the insertion of corresponding tables shewing the relative ages of parents in groups of five years. It will be seen from the tables that the largest number of single births occurred where the ages of both father and mother were between 25 and 29, while the largest number of twin births occurred where the ages of both father and mother were between 30 and 34. The largest number of mothers was found at ages 25 to 29.

(a) AGES OF PARENTS IN CASES OF SINGLE BIRTHS, COMMONWEALTH, 1912.

Age.		Total Fathers.	Ages of Mothers.							
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.
Ages of Fathers.	Under 20	436	1	305	121	8	1	...	...	...
	20 to 24	13,217	1	2,489	8,629	1,871	189	29	4	...
	25 to 29	31,480	2	1,310	12,891	14,356	2,516	361	35	...
	30 to 34	29,850	...	324	5,046	12,394	10,247	1,674	150	...
	35 to 39	22,293	...	125	1,602	5,330	8,411	6,181	624	...
	40 to 44	14,690	...	33	476	1,878	4,153	5,389	2,684	...
	45 to 49	7,509	...	8	172	654	1,434	2,675	2,248	...
	50 to 54	2,678	...	7	56	214	434	787	970	...
	55 to 59	654	...	...	13	56	96	227	196	...
	60 to 64	219	...	2	9	24	41	53	66	...
	65 & upwards	83	...	...	1	7	24	21	24	...
	Not stated	28	...	...	5	4	10	2	2	...
Mothers of nuptial children		123,137	4	4,603	29,021	36,796	27,556	17,399	7,003	719
Mothers of ex-nuptial children		7,239	20	1,977	2,776	1,302	583	374	140	22
Total mothers		130,376	24	6,580	31,797	38,098	28,139	17,773	7,143	741

(b) AGES OF PARENTS OF TWINS, COMMONWEALTH, 1912.

Age.		Total Fathers.	Ages of Mothers.						
			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 & upwards.
Ages of Fathers.	Under 20	...	3	3	...	...	...	...	...
	20 to 24	...	89	14	48	24	2	1	...
	25 to 29	...	267	12	89	135	29	1	...
	30 to 34	...	298	1	29	103	140	25	...
	35 to 39	...	271	2	7	48	107	100	6
	40 to 44	...	202	...	9	17	59	88	29
	45 to 49	...	96	...	1	9	21	40	23
	50 to 54	...	37	...	1	1	5	16	12
	55 to 59	...	9	...	...	...	2	3	4
	60 to 64	...	2	...	...	...	...	...	2
	65 and upwards	...	1	...	...	...	1	...	...
Mothers of nuptial twins		...	1,275	32	184	337	366	274	77
Mothers of ex-nuptial "		...	59	4	23	10	12	7	3
Total mothers		...	1,334	36	207	347	378	281	80

(c) AGES OF PARENTS OF TRIPLETS, COMMONWEALTH, 1912.

Age.		Total Fathers.	Ages of Mothers.					
			Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.
Ages of Fathers.	20 to 24	...	1	...	1	...	...	...
	25 to 29	...	...	...	...	...	...	...
	30 to 34	...	2	...	2	...	...	...
	35 to 39	...	6	...	...	4	2	...
	40 to 44	...	4	...	...	1	1	2
Ages of Mothers.	45 to 49	...	2	...	...	...	1	1
	50 to 54	...	...	...	...	...	...	...
Mothers of nuptial triplets		...	15	...	1	2	5	4
Mothers of ex-nuptial triplets		...	1	1	...	...	...	...
Total mothers		...	16	1	1	2	5	4

9. **Birthplaces of Parents.**—The relative birthplaces of the parents of children whose births were registered during the year 1912 will be found tabulated in the Bulletin before-mentioned. A summary of the results of the tabulation is here given:—

BIRTHPLACES OF PARENTS OF CHILDREN, COMMONWEALTH, 1912.

Birthplaces.	Fathers			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AUSTRALASIA—									
Commonwealth of									
Australia—									
N. South Wales	38,184	373	3	41,431	404	2	2,666	19	...
Victoria ...	33,549	342	7	32,964	359	9	1,925	20	...
Queensland ...	10,384	114	...	13,039	130	1	996	4	1
South Australia	12,760	152	2	13,092	156	2	606	5	...
Western Australia	1,381	13	...	1,912	19	1	147	1	...
Tasmania ...	5,585	58	...	5,871	57	...	367	3	...
North. Territory	4	...	...	11	...	...	2	...	...
New Zealand ...	1,339	15	...	1,298	10	...	78	1	...
EUROPE—									
England... ..	11,136	109	2	7,324	89	...	234	5	...
Wales	338	4	...	252	2	...	7	...	...
Scotland... ..	2,709	28	...	1,831	18	...	67	1	...
Ireland	2,182	24	1	1,343	13	...	47	...	...
Isle of Man ...	25	...	...	20	...	...	...	...	...
Other European British Possessions...	46	1	...	17	...	...	1	...	...
Austria-Hungary ...	84	...	...	48	...	...	...	...	...
Belgium... ..	5	...	...	3	...	...	...	...	...
Denmark	219	1	...	67	1	...	1	...	...
France	62	...	...	36	...	...	2	...	...
Germany	1,004	17	...	509	4	...	8	...	...
Greece	52	...	...	17	...	...	...	...	...
Italy	291	3	...	172	2	...	5	...	...
Netherlands ...	29	...	...	10	...	...	...	...	...
Norway	113	...	...	24	...	...	1	...	...
Portugal... ..	2	...	...	2	...	...	...	...	...
Russia	176	3	...	98	3	...	1	...	...
Spain	27	...	...	14	...	...	1	...	...
Sweden	198	2	...	27	...	...	...	...	...
Switzerland ...	43	...	...	21	...	...	...	...	...
Other European Countries ...	38	...	...	16	...	...	...	...	...
ASIA—									
British India ...	160	3	...	76	1	...	1	...	...
Ceylon	16	...	...	4	...	...	...	...	...
Hong Kong	2	...	...	4	...	...	...	...	...
Straits Settlements	7	...	...	4	...	...	...	...	...
Other Asiatic British Possessions ...	3	...	...	...	...	...	1	...	...
Afghanistan ...	2	...	...	...	...	...	...	...	...
Arabia	2	...	...	...	...	...	...	...	...
China	165	2	...	49	1	...	2	...	...
Japan	16	1	...	8	...	...	2	...	...
Java	4	...	...	1	...	...	...	...	...
Philippine Islands	4	1	...	1	...	...	...	...	...
Syria	119	1	...	106	1	...	1	...	...
Other Asiatic Countries ...	8	...	...	3	...	...	...	...	...

BIRTHPLACES OF PARENTS OF CHILDREN—Continued.

Birthplace.	Fathers.			Mothers of Nuptial Children.			Mothers of Ex-nuptial Children.		
	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.	Single Births.	Twins.	Trip-lets.
AFRICA—									
Cape of Good Hope	9	...	...	12	...	...	1	...	...
Mauritius	28	...	...	6	...	...	...	...	...
Natal	5	...	...	4	...	...	...	...	...
S. Africa (undefined)	65	1	...	75	...	...	1	...	...
Other African British Possessions	3	...	...	...	...	...	...	...	...
Egypt	5	...	...	3	...	...	1	...	...
Other African Countries	9	...	...	3	...	...	1	...	...
AMERICA—									
Canada	87	...	...	34	2	...	4	...	...
Jamaica	2	1	...	1	...	...	...	...	...
Newfoundland	3	...	...	1	...	...	...	...	...
Other American British Pos.	6	...	...	...	...	...	...	...	...
Argentine Republic	2	...	...	1	...	...	...	...	...
Brazil	1	...	...	1	...	...	...	...	...
Chile	4	...	...	...	...	...	...	...	...
Mexico	2	...	...	...	...	...	...	...	...
Peru	1	...	...	1	...	...	...	...	...
United States of America	195	3	...	102	...	...	1	...	...
Other American Countries	57	...	...	22	...	...	3	...	...
POLYNESIA—									
Fiji	30	1	...	24	1	...	1	...	...
Friendly Islands	...	...	...	1	1	...	...	...	...
Other Polynesian British Pos.	1	...	...	...	...	...	...	...	...
New Caledonia	14	...	...	9	1	...	8	...	...
New Hebrides	3	1	...	1	...	...	...	...	...
Samoa	3	...	...	2	...	...	...	...	...
Other Polynesian Islands	...	...	...	2	...	...	...	...	...
South Sea Islands (so described)	16	...	...	1	...	...	1	...	...
At Sea	137	1	...	80	...	...	8	...	...
Unspecified	26	...	...	26	...	...	40	...	...
Total	123,137	1,275	15	123,137	1,275	15	7,239	59	1

10. **Occupations of Fathers.**—A summary of the occupations of the fathers of all nuptial children, whose births were registered in 1912, will be found in the following table. The figures include all the States and Territories of the Commonwealth:—

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN, COMMONWEALTH, 1912.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
CLASS I.—PROFESSIONAL.			
General Government ...	708	Hay, Corn, etc. ...	258
Local Government ...	144	Other Vegetable Matter not elsewhere included ...	156
Defence ...	217	Wood and Coal ...	285
Law and Order ...	1,219	Stone, Clay, and Glass ...	32
Religion ...	382	Gold, Silver, and Precious Stones ...	9
Charities ...	6	Ironmongery ...	250
Health ...	925	Merchants, Importers ...	570
Literature ...	179	Shopkeepers and Assistants ...	1,104
Science ...	117	Dealers and Hawkers ...	368
Civil Engineering, Architecture, and Surveying ...	394	Agents and Brokers ...	578
Education ...	788	Clerks, Bookkeepers, etc. ...	3,154
Fine Arts ...	146	Commercial Travellers, Salesmen ...	1,463
Music ...	186	Others engaged in Commercial Pursuits ...	1,023
Amusements ...	511	Speculators on Chance Events ...	45
Total Professional ...	5,922	Storage ...	9
CLASS II.—DOMESTIC.		Total Commercial ...	16,598
Hotelkeepers and Assistants ...	902	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging ...	248	Railway Traffic ...	4,300
House Servants ...	224	Tramway Traffic ...	1,125
Coachmen and Grooms ...	273	Road Traffic ...	5,826
Hairdressers ...	622	Sea and River Traffic ...	1,774
Laundrymen ...	56	Postal Service ...	491
Others engaged in domestic service ...	274	Telegraph and Telephone Service ...	508
Total Domestic ...	2,599	Messengers, etc. ...	28
CLASS III.—COMMERCIAL.		Total Transport & Communication ...	14,052
Banking and Finance ...	497	CLASS V.—INDUSTRIAL.	
Insurance and Valuation ...	523	Books and Publications ...	972
Landed and House Property ...	157	Musical Instruments ...	66
Property Rights not elsewhere clsd. ...	7	Prints, Pictures and Art Materials ...	71
Books, Publications, Advertising ...	197	Ornaments and Small Wares ...	75
Musical Instruments ...	20	Equipment for Sports and Games ...	6
Prints, Pictures and Art Materials ...	3	Medals, Type, and Dies ...	35
Ornaments and Small Wares ...	12	Watches, Clocks, and Scientific Instruments ...	137
Sports and Games ...	3	Surgical Instruments ...	2
Watches, Clocks, Jewellery ...	14	Arms and Ammunition ...	13
Surgical Instruments ...	1	Engines, Machines, Tools, and Implements ...	1,281
Machinery ...	70	Carriages and Vehicles ...	944
Carriages and Vehicles ...	35	Harness, Saddlery & Leatherware ...	484
Harness, Saddlery & Leatherware ...	2	Ships, Boats, etc. ...	126
Ships, Boats, Marine Stores ...	1	Furniture ...	637
Building Materials ...	28	Building Materials ...	751
Furniture ...	55	Chemicals and By-Products ...	52
Chemicals and By-products ...	10	Textile Fabrics ...	53
Paper and Stationery ...	54	Dress ...	2,053
Textile Fabrics ...	657	Fibrous Materials ...	75
Dress ...	166	Animal Food ...	442
Fibrous Materials ...	11	Vegetable Food ...	1,570
Animal Food ...	2,395	Groceries, Drinks, Narcotics, and Stimulants ...	507
Vegetable Food ...	673	Animal Matter, not elsewhere clsd. ...	447
Groceries, Drinks, Narcotics, and Stimulants ...	1,355	Workers in wood, not elsewhere clsd. ...	136
Living Animals ...	208	Vegetable Produce for Fodder ...	7
Leather, Raw Materials ...	40		
Wool and Tallow ...	100		

OCCUPATIONS OF FATHERS OF ALL NUPTIAL CHILDREN—Continued.

Occupations.	Number of Fathers.	Occupations.	Number of Fathers.
Paper	20	CLASS VI.—AGRICULTURAL, PASTORAL, MINING, ETC.	
Stone, Clay, Glass, etc. ...	708		
Jewellery and Precious Stones ...	240		
Metals, other than Gold & Silver ...	3,600		
Gas, Electric Lighting, etc. ...	699		
Building—			
Builders	592		
Stonemasons	316		
Bricklayers	730		
Carpenters	3,372		
Slaters	41	Agricultural	19,848
Plasterers	327	Pastoral	3,878
Painters	1,411	Dairy, Farming	1,416
Plumbers	854	Bees, Fisheries, and Wild Animals ...	385
Signwriters	64	Forestry	884
Others	9	Water Conservation and Supply ...	144
Roads, Railways, Earthworks ...	320	Mines and Quarries	7,518
Disposal of the Dead	35	Total Primary Producers	34,073
Disposal of Refuse	222	CLASS VII.—INDEFINITE.	
Other Industrial Workers—			
Manufacturers, etc.	397		
Engineers, Firemen	3,143	Independent Means, having no specific occupation ...	112
Contractors	1,384	Occupation not stated	39
Labourers, undefined	21,366	Total Indefinite	151
Others	222	CLASS VIII.—DEPENDENTS.	
Total Industrial	51,024		
		Dependent on State, ...	1
		Dependent Relatives	7
		Total Dependents	8
		Total all Occupations	124,427

11. Mothers' Age, Duration of Marriage, and Issue.—A tabulation has been made shewing, in age-groups, the duration of marriage and issue of mothers. The total number of nuptial confinements in 1912 was 124,427, viz., 123,137 single births, 1275 cases of twins, and 15 cases of triplets. From this number 364 mothers must be deducted, in whose case the necessary particulars either as to date of marriage or as to previous issue were not stated. The tables refer, therefore, to a total of 124,063 mothers. They exclude children by former marriages and still-born children, but include ex-nuptial children, previous issue by the same father. The tables cannot be given *in extenso*, but the following are their most salient features. The complete tabulations are shown in "Commonwealth Bulletin of Population and Vital Statistics, No. 30; Commonwealth Demography, 1912, and previous years."

DURATION OF MARRIAGE AND ISSUE OF MOTHERS OF ALL AGES.
COMMONWEALTH, 1912.

Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.	Duration of Marriage.	Total Mothers.	Total Issue.	Average Number of Children.
Years.				Years.			
0-1 ...	21,360	21,640	1.03	17-18 ...	1,655	11,890	7.18
1-2 ...	9,470	10,556	1.12	18-19 ...	1,370	10,288	7.51
2-3 ...	10,165	18,254	1.80	19-20 ...	1,195	9,535	7.99
3-4 ...	10,378	21,843	2.10	20-21 ...	1,061	8,808	8.30
4-5 ...	9,283	23,600	2.54	21-22 ...	917	8,139	8.87
5-6 ...	8,478	24,544	2.90	22-23 ...	748	6,754	9.03
6-7 ...	7,267	24,047	3.31	23-24 ...	507	4,691	9.25
7-8 ...	6,449	23,706	3.68	24-25 ...	392	3,896	9.94
8-9 ...	5,549	22,389	4.03	25-26 ...	292	3,068	10.51
9-10 ...	4,554	19,838	4.37	26-27 ...	171	1,818	10.63
10-11 ...	4,620	21,599	4.68	27-28 ...	96	1,063	11.07
11-12 ...	4,110	21,019	5.11	28-29 ...	54	636	11.78
12-13 ...	3,835	20,950	5.46	29-30 ...	25	295	11.80
13-14 ...	3,084	18,070	5.86	30-31 ...	13	165	12.69
14-15 ...	2,675	16,535	6.18	31-32 ...	1	13	13.00
15-16 ...	2,308	14,916	6.46	32-33 ...	6	73	12.17
16-17 ...	1,975	13,711	6.94	Total	124,063	408,349	3.29

AGES AND ISSUE OF MOTHERS, COMMONWEALTH, 1912.

Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.	Ages of Mothers.	Total Mothers.	Total Issue.	Average Number of Children.
Under 20 years	4,608	5,539	1.20	40-44 years ...	7,071	49,005	6.93
20-24 years ...	29,098	50,987	1.75	45 yrs. and over	721	6,269	8.69
25-29 " ...	37,036	97,698	2.64				
30-34 " ...	27,884	106,259	3.81				
35-39 " ...	17,645	92,592	5.25	All ages ...	124,063	408,349	3.29

PREVIOUS ISSUE OF MOTHERS OF VARIOUS AGES, COMMONWEALTH, 1912.

Previous Issue.	Mothers' Ages.							
	Under 20 Years.	20-24 Years.	25-29 Years.	30-34 Years.	35-39 Years.	40-44 Years.	45 Years and Over.	Total.
0	3,789	14,836	10,394	3,926	1,403	316	28	34,692
1	745	8,791	9,417	4,661	1,638	336	21	25,609
2	68	3,921	7,680	5,122	2,077	465	16	19,349
3	6	1,215	5,104	4,565	2,334	584	39	13,847
4	...	269	2,739	3,785	2,385	742	34	9,954
5	...	49	1,156	2,811	2,203	754	38	7,011
6	...	15	383	1,691	2,032	784	73	4,978
7	...	2	123	799	1,477	802	59	3,262
8	...	...	28	333	985	738	93	2,177
9	...	...	10	132	581	630	81	1,434
10	...	...	...	42	303	394	80	819
11	...	...	1	14	187	248	69	469
12	...	...	1	2	60	158	40	261
13	...	...	...	1	11	68	28	108
14	...	...	...	...	11	34	15	60
15	...	...	...	...	5	11	4	20
16	...	...	...	...	2	5	1	8
17	...	...	...	...	1	2	2	5
Total Mothers	4,608	29,098	37,036	27,884	17,645	7,071	721	124,063

The tables shew a fairly regular increase in the number of children up to the period where the marriage has lasted twenty years, and it appears that the average interval between successive confinements up to that period was rather more than two and a half years. The average number of children of all marriages was 3.29, the corresponding figure for 1911 having been 3.34, and for 1910, 3.41.

A similar table has been prepared showing the previous issue of mothers of twins and triplets, from which it appears that 277 mothers had twins at their first confinement; 206 at their second; 213 at their third; 164 at their fourth; 122 at their fifth; 78 at their sixth; 79 at their seventh; 44 at their eighth; 27 at their ninth; 22 at their tenth; 11 at their eleventh; 5 at their twelfth; 4 at their thirteenth; 1 at her fourteenth; and one at her fifteenth.

Of the fifteen cases of triplets 2 occurred at the first confinement; 2 at the second; 3 at the third; 2 at the fourth; 2 at the fifth; 2 at the seventh; 1 at the ninth; and 1 at the fifteenth.

12. **Interval between Marriage and First Birth.**—The following table shews the interval between marriage and first birth. Twins and triplets are included, the eldest born only being enumerated.

INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, COMMONWEALTH, 1912.

Interval.	Number of First Children.	Interval.	Number of First Children.	Interval.	Number of First Children.
Under 1 month	525	11 months	2,063	11 years	36
1 month	658	1 year	8,518	12 "	32
2 months	936	2 years	2,507	13 "	28
3 "	1,221	3 "	943	14 "	7
4 "	1,444	4 "	469	15 "	17
5 "	1,793	5 "	276	16 "	11
6 "	2,267	6 "	183	17 "	9
7 "	1,904	7 "	120	18 "	8
8 "	1,656	8 "	80	19 "	5
9 "	3,802	9 "	71	20 "	1
10 "	3,034	10 "	66	21 "	2
				Total	34,692

Of these 34,692 children 17,698 were males and 16,994 were females; the masculinity of first births was therefore 104.14 as compared with 104.54 for total births.

The previous issue of mothers of ex-nuptial children is not recorded, but for the purposes of the following table all ex-nuptial births have been assumed to be first births. The table shews the ages of mothers of ex-nuptial births, of nuptial births occurring less than nine months after marriage, and of nuptial births occurring nine months or more after marriage. A comparison of the combined total of the first two columns with the total of nuptial children born nine months or more after marriage, reveals the fact that for all ages the ratio of the two was approximately as 25 is to 28. At all ages up to and including 21, however, there was a great preponderance of ex-nuptial births and of births following on ante-nuptial conception. It must, of course, be understood that a certain number of premature births are necessarily included among the births which occurred less than nine months after marriage, but there is no means of arriving at the proportion of those births.

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST BIRTH, etc.

COMMONWEALTH, 1912.

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
12 ...	1	...	1	...	...	1
13 ...	1	...	1	1	1	2
14 ...	18	3	21	...	3	21
15 ...	87	23	110	3	26	113
16 ...	198	133	331	18	151	349
17 ...	394	408	802	102	510	904
18 ...	600	960	1,560	281	1,241	1,841
19 ...	703	1,288	1,991	569	1,857	2,560
20 ...	629	1,337	1,966	983	2,320	2,949
21 ...	673	1,552	2,225	1,351	2,903	3,576
22 ...	578	1,375	1,953	1,920	3,295	3,873
23 ...	496	1,216	1,712	2,098	3,314	3,810
24 ...	423	900	1,323	2,104	3,004	3,427
25 ...	338	718	1,056	2,023	2,741	3,079
26 ...	310	578	888	1,863	2,441	2,751
27 ...	273	427	700	1,623	2,050	2,323

AGES OF MOTHERS AND INTERVAL BETWEEN MARRIAGE AND FIRST
BIRTH—Continued,

Age of Mother at Birth of Child.	Ex-nuptial Births.	Nuptial Births less than nine months after Marriage.	Total of two preceding columns.	Nuptial Births nine months after Marriage and later.	Total Nuptial First Births.	Nuptial First Births and Ex-nuptial Births.
Years.						
28 ...	208	365	568	1,422	1,787	1,990
29 ...	188	248	436	1,127	1,375	1,563
30 ...	165	191	356	987	1,178	1,343
31 ...	96	140	236	742	882	978
32 ...	134	143	277	673	816	950
33 ...	100	88	188	504	592	692
34 ...	100	74	174	384	458	558
35 ...	90	66	156	368	434	524
36 ...	77	52	129	269	321	398
37 ...	89	30	119	220	250	339
38 ...	69	22	91	181	203	272
39 ...	56	21	77	174	195	251
40 ...	47	13	60	104	117	164
41 ...	22	16	38	63	79	101
42 ...	35	10	45	54	64	99
43 ...	24	2	26	25	27	51
44 ...	15	4	19	25	29	44
45 ...	9	1	10	14	15	24
46 ...	7	...	7	4	4	11
47 ...	1	...	1	5	5	6
48 ...	2	...	2	2	2	4
49 ...	2	...	2	2	2	4
50 ...	1	...	1	...	...	1
Not stated	45	...	45	...	...	45
Total ...	7,299	12,404	19,703	22,288	34,692	41,991

13. **Interval between Birth and Registration of Birth.**—Information was obtained during 1912 as to the period elapsing between birth and registration. The maximum number registered was forty-one days after birth, while in the case of ex-nuptial births the greatest number of children was registered within two days after birth.

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH, 1912.

Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex- Nuptial Births.	Total Births.
Under 1 day ...	327	89	416	16 days ...	1,856	199	2,055
1 day ...	800	237	1,037	17 " ...	1,801	200	2,001
2 days ...	920	373	1,293	18 " ...	1,849	212	2,061
3 " ...	911	258	1,169	19 " ...	1,836	182	2,018
4 " ...	992	198	1,190	20 " ...	1,908	166	2,074
5 " ...	988	132	1,120	21 " ...	2,044	153	2,197
6 " ...	994	127	1,121	22 " ...	1,897	143	2,040
7 " ...	982	133	1,115	23 " ...	1,822	125	1,947
8 " ...	1,052	120	1,172	24 " ...	1,899	123	2,022
9 " ...	1,131	117	1,248	25 " ...	1,991	113	2,104
10 " ...	1,271	128	1,399	26 " ...	2,045	113	2,158
11 " ...	1,461	162	1,623	27 " ...	2,131	103	2,234
12 " ...	1,640	170	1,810	28 " ...	2,260	99	2,359
13 " ...	1,843	175	2,018	29 " ...	2,269	81	2,350
14 " ...	1,813	179	1,992	30 " ...	2,347	103	2,450
15 " ...	1,743	164	1,907	31 " ...	2,456	97	2,553

INTERVAL BETWEEN BIRTH AND REGISTRATION, COMMONWEALTH,
1912—Continued.

Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.	Interval.	Nuptial Births.	Ex-Nuptial Births.	Total Births.
32 days ...	2,333	103	2,436	55 days ...	1,918	59	1,977
33 " ...	2,412	112	2,524	56 " ...	1,987	66	2,053
34 " ...	2,493	98	2,591	57 " ...	1,978	60	2,038
35 " ...	2,641	98	2,739	58 " ...	2,076	76	2,152
36 " ...	2,744	87	2,831	59 " ...	2,050	63	2,113
37 " ...	2,973	78	3,051	60 " ...	1,484	47	1,531
38 " ...	3,258	102	3,360	61 to 69 days	1,986	89	2,075
39 " ...	3,497	106	3,603	70 " 79 "	736	42	778
40 " ...	3,851	121	3,972	80 " 89 "	384	23	413
41 " ...	4,407	124	4,531	90 " 99 "	229	13	242
42 " ...	3,714	95	3,809	100 " 109 "	156	12	168
43 " ...	2,707	62	2,769	110 " 119 "	105	9	114
44 " ...	2,458	52	2,510	120 " 129 "	67	9	76
45 " ...	2,259	60	2,319	130 " 139 "	59	9	68
46 " ...	2,155	54	2,209	140 " 149 "	67	6	73
47 " ...	1,960	39	1,999	150 " 159 "	46	3	49
48 " ...	1,951	55	2,006	160 " 169 "	48	1	49
49 " ...	1,885	57	1,942	170 " 179 "	49	2	51
50 " ...	1,859	56	1,915	180 " 365 "	241	23	264
51 " ...	1,754	67	1,821	Not stated	3	1	4
52 " ...	1,782	48	1,830				
53 " ...	1,851	47	1,898				
54 " ...	1,838	44	1,882				
				Total Births	125,730	7,358	133,088

§ 2. Marriages.

1. **Marriages, 1902 to 1912.**—The number of marriages registered in the Commonwealth in 1912 was 42,147, the highest number ever recorded. There has been a steady increase in the annual number of marriages in each State since 1903, and the crude marriage-rate increased similarly in all the States until 1907, with the exception of Western Australia. In 1908 all the States, with the exception of New South Wales and Tasmania, had a lower marriage rate than in 1907, but the rate recovered in 1909 and the three following years, and was considerably higher in 1912 than in 1907 in all the States. The number of marriages in each State since 1902 is shewn below. The rate for 1912 was the highest ever experienced in the Commonwealth.

TOTAL MARRIAGES, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	North Terr.	Federal Terr.	C'wealth.
1902 ...	10,486	8,477	3,243	2,376	2,024	1,313	7	...	27,926
1903 ...	9,759	7,605	2,933	2,260	2,064	1,344	12	...	25,977
1904 ...	10,422	8,210	3,078	2,526	2,088	1,350	8	...	27,682
1905 ...	10,970	8,774	3,173	2,594	2,123	1,365	5	...	29,004
1906 ...	11,551	8,930	3,588	2,679	2,261	1,399	2	...	30,410
1907 ...	12,187	9,575	4,105	3,070	2,114	1,410	9	...	32,470
1908 ...	12,641	9,335	4,009	3,112	2,012	1,432	10	...	32,551
1909 ...	13,025	9,431	4,543	3,275	1,997	1,494	10	...	33,775
1910 ...	14,307	10,239	4,768	3,661	2,107	1,493	17	...	36,592
1911 ...	15,278	11,088	5,167	4,036	2,421	1,477	10	a) 5	39,482
1912 ...	16,666	11,738	5,627	4,056	2,524	1,506	24	6	42,147

(a) Part of New South Wales prior to 1911.

2. **Marriage Rates, 1902 to 1912.**—The number of marriages registered per thousand of mean population is shewn in the following table for the same period :—

CRUDE MARRIAGE RATE (a), COMMONWEALTH, 1902 to 1912 (b).

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Nthn. Terr.	Federal Territory.	C'wealth.
1902 ...	7.55	7.02	6.35	6.68	9.89	7.50	1.53	...	7.26
1903 ...	6.90	6.81	5.70	6.36	9.40	7.45	2.76	...	6.67
1904 ...	7.24	6.83	5.90	7.08	8.92	7.38	1.90	...	7.02
1905 ...	7.46	7.28	6.00	7.21	8.61	7.40	1.21	...	7.25
1906 ...	7.68	7.86	6.69	7.38	8.89	7.59	0.50	...	7.49
1907 ...	7.89	7.81	7.56	8.35	8.27	7.63	2.35	...	7.87
1908 ...	8.03	7.53	7.24	8.23	7.80	7.64	2.74	...	7.76
1909 ...	8.15	7.48	7.97	8.43	7.59	7.85	2.83	...	7.90
1910 ...	8.76	7.98	8.06	9.21	7.77	7.82	5.00	...	8.37
1911 ...	9.19	8.40	8.41	9.81	8.44	7.76	3.01	(c) 2.81	8.79
1912 ...	9.60	8.65	8.91	9.62	8.37	7.86	7.14	2.95	9.07

(a) Number of marriages (not persons married) per 1000 of mean annual population. (b) Rate corrected in view of Census Returns, 1911. (c) Part of New South Wales prior to 1911.

As in some international tabulations the marriage rates are calculated per 1000 of the unmarried population of 15 years and over, the corresponding rates have been worked out for the Commonwealth for the four last Census periods. The figures comprise in each case the Census year with the year immediately preceding and the year immediately following, and are as follows:—Years 1880-82, 48.98; years 1890-92, 45.74; years 1900-02, 42.14; years 1910-12, 50.10. These rates refer, of course, to persons married and not to marriages, as do the rates in the preceding table.

3. Marriage Rates in Various Countries.—A comparison of the Australian marriage rate with that of European countries shews it to be considerably below the rates prevailing in the East of Europe, above those of Central and Western Europe, and much higher than those of the North of Europe:—

CRUDE MARRIAGE RATES.—VARIOUS COUNTRIES.

Country.	Year.	Crude Marriage Rate.	Country.	Year.	Crude Marriage Rate.
Rumania ...	1911	10.5	Russia ...	1905	7.8
Servia ...	1911	10.3	Austria ...	1911	7.6
Canada (Ontario) ...	1911	10.2	England and Wales ...	1911	7.6
New South Wales ...	1912	9.6	Italy ...	1911	7.5
South Australia ...	1912	9.6	Switzerland ...	1910	7.3
Hungary ...	1911	9.3	United Kingdom ...	1911	7.3
Commonwealth ...	1912	9.1	Denmark ...	1911	7.2
Bulgaria ...	1908	8.9	Netherlands ...	1911	7.2
Queensland ...	1912	8.9	Spain ...	1911	7.1
Japan ...	1909	8.8	Scotland ...	1911	6.7
New Zealand ...	1912	8.8	Norway ...	1911	6.3
Victoria ...	1912	8.7	Finland ...	1911	6.0
Western Australia ...	1912	8.4	Sweden ...	1911	5.9
Prussia ...	1911	8.0	Chile ...	1911	5.7
Belgium ...	1910	7.9	Ireland ...	1911	5.4
German Empire ...	1911	7.9	Ceylon ...	1911	5.2
Tasmania ...	1912	7.9	Jamaca ...	1911	4.3
France ...	1911	7.8			

4. Age at Marriage.—(a) The age at marriage of bridegrooms and brides will be found in the following table, the previous conjugal condition of the contracting parties being distinguished. It will be seen that no less than 1735 males were married during 1912 who were less than twenty-one years of age, of whom one was a widower. The corresponding number of females was 8605, of whom one was a widow. At the other extreme there were twenty-four men of sixty-five years and upwards, who described themselves as bachelors, and two spinsters of corresponding ages.

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1912.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
14 years	...	...	...	...	10	...	...	10
15 "	...	...	...	...	69	...	...	69
16 "	6	...	...	6	321	...	...	321
17 "	35	...	...	35	1,037	...	...	1,037
18 "	197	...	...	197	1,788	1	...	1,789
19 "	541	...	...	541	2,533	...	...	2,533
20 "	955	1	...	956	2,846	...	...	2,846
21 "	2,348	1	...	2,349	4,454	7	...	4,461
22 "	2,805	4	1	2,810	3,834	12	6	3,852
23 "	3,371	10	...	3,381	3,696	17	5	3,718
24 "	3,587	13	...	3,600	3,360	24	7	3,391
25 "	3,486	20	3	3,509	2,883	47	7	2,937
26 "	3,384	26	4	3,414	2,386	43	14	2,443
27 "	2,981	39	6	3,026	2,020	70	23	2,113
28 "	2,654	33	12	2,699	1,634	60	16	1,710
29 "	2,145	33	12	2,190	1,275	70	21	1,366
30 "	1,757	52	10	1,819	1,064	67	29	1,160
31 "	1,370	53	6	1,429	746	62	16	824
32 "	1,287	69	16	1,372	697	81	24	802
33 "	932	50	14	996	504	69	8	581
34 "	815	56	18	889	427	88	20	535
35 "	754	74	10	838	380	84	12	476
36 "	640	62	7	709	332	73	11	416
37 "	457	79	15	551	265	78	14	357
38 "	473	79	10	562	235	83	14	332
39 "	378	94	8	480	177	90	13	280
40 "	332	81	9	422	145	69	11	225
41 "	223	73	9	305	87	64	7	158
42 "	246	79	6	331	104	68	5	177
43 "	197	73	5	275	79	65	3	147
44 "	136	64	5	205	81	61	6	148
45 "	174	66	6	246	64	64	5	133
46 "	130	66	14	210	49	37	5	91
47 "	94	77	6	177	32	37	2	71
48 "	107	87	5	199	33	66	5	104
49 "	78	74	5	157	27	41	4	72
50 "	88	80	6	174	25	40	2	67
51 "	48	69	2	119	10	28	1	39
52 "	48	59	6	113	14	33	4	51
53 "	31	43	2	76	10	18	1	29
54 "	25	60	4	89	9	20	...	29
55 "	24	63	2	89	6	23	1	30
56 "	22	55	...	77	6	18	1	25
57 "	16	39	3	58	8	20	...	28
58 "	22	43	2	67	8	16	1	25
59 "	8	25	...	33	2	6	...	8
60 "	8	35	1	44	2	15	...	17
61 "	11	19	1	31	2	9	...	11
62 "	5	30	1	36	5	5	...	10
63 "	9	23	1	33	2	11	...	13
64 "	6	18	...	24	1	11	...	12
65 "	6	20	...	26	...	13	...	13
66 "	4	17	...	21	...	8	...	8
67 "	3	21	...	24	1	6	...	7
68 "	3	11	...	14	...	7	...	7
69 "	1	14	...	15	...	8	...	8
70 "	1	17	...	18	...	3	...	3

AGES AND CONJUGAL CONDITION OF PERSONS MARRIED, 1912—Continued.
COMMONWEALTH.

Age at Marriage.	Bridegrooms.				Brides.			
	Bachelors	Widowers	Divorced.	Total.	Spinsters.	Widows.	Divorced.	Total.
71 years ...	...	10	...	10	1	1	...	2
72 " ...	3	9	...	12	...	2	...	2
73 " ...	2	9	...	11	...	...	...	...
74 " ...	...	9	...	9	...	...	...	...
75 " ...	1	7	...	8	...	1	...	1
76 " ...	...	2	...	2	...	1	...	1
77 " ...	...	4	...	4	...	1	...	1
78 " ...	...	4	...	4	...	1	...	1
79 " ...	...	3	...	3	...	1	...	1
80 " ...	...	3	...	3	...	...	...	...
81 " ...	...	2	...	2	...	...	...	...
82 " ...	...	1	...	1	...	1	...	1
85 " ...	...	1	...	1	...	...	...	...
Not stated ...	10	1	...	11	12	...	...	12
Total ...	39,480	2,414	253	42,147	39,798	2,025	324	42,147

(b) The relative ages of bridegrooms and brides are shewn for single years in "Bulletin of Population and Vital Statistics, No. 30"; a condensation into age-groups of five years is here given:—

RELATIVE AGES OF PERSONS MARRIED, COMMONWEALTH, 1912.

RELATIVE RATES OF PERSONS MARRIED, 1900												
Ages.		Total Bride- grooms.	Ages of Brides.								Not Stated.	
			Under 15.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 and Upwds.		
Ages of Bridegrooms.	Under 20	...	779	2	522	223	27	3	1	1	...	...
	20 to 24	...	13,096	5	3,232	7,909	1,673	212	47	11	6	1
	25 to 29	...	14,838	2	1,479	7,107	5,014	968	211	48	8	1
	30 to 34	...	6,505	...	362	2,033	2,349	1,299	363	77	20	2
	35 to 39	...	3,140	...	109	651	967	765	459	144	45	...
	40 to 44	...	1,538	...	92	218	324	345	321	211	97	...
	45 to 49	...	989	1	18	85	135	179	245	168	157	...
	50 to 54	...	571	...	4	30	46	72	129	114	176	...
	55 to 59	...	324	...	...	7	20	35	54	49	159	...
	60 to 64	...	168	...	...	2	9	14	19	17	107	...
	65 and upwards	...	188	...	...	3	4	10	11	15	145	...
Not stated	...	11	...	1	...	1	...	...	...	1	8	
Total Brides ...		42,147	10	5,749	18,268	10,569	3,902	1,861	855	921	12	

5. **Previous Conjugal Condition.**—In a previous table the total number of bachelors and spinsters, widowed and divorced persons, who were married during the year 1912, was shewn. In the following table the relative conjugal condition of the contracting parties is given:—

RELATIVE CONJUGAL CONDITION OF PERSONS MARRIED, COMMONWEALTH, 1912.

Conjugal Condition.		Total Bridegrooms.	Brides.		
			Spinsters.	Widows.	Divorced.
Bridegrooms	Bachelors ...	39,480	37,914	1,315	251
	Widowers ...	2,414	675	680	59
	Divorced ...	253	209	30	14
Total Brides ...		42,147	38,798	2,025	324

6. **Birthplaces of Persons Married.**—Information as to the birthplaces of persons who were married in 1912 was not obtained in the State of Western Australia; the following figures refer, therefore, only to New South Wales, Victoria, Queensland, South Australia, Tasmania and Northern Territory and Federal Territory. As might be expected, there were more brides than bridegrooms who were natives of the Commonwealth. In "Bulletin No. 30, Commonwealth Demography," the relative birthplaces of bridegrooms and brides will be found tabulated.

BIRTHPLACES OF PERSONS MARRIED, 1912.

COMMONWEALTH (a).

Birthplaces.	Bridegrooms.	Brides.	Birthplaces.	Bridegrooms.	Brides.
AUSTRALASIA—			ASIA—cont.—		
New South Wales ...	12,538	13,992	Philippine Islands ...	3	1
Victoria ...	10,752	11,229	Syria ...	14	12
Queensland...	3,839	4,625	Other Asiatic Countries	3	1
South Australia ...	3,878	4,009	AFRICA—		
Western Australia ...	55	43	Cape of Good Hope...	1	2
Tasmania ...	1,634	1,746	Mauritius ...	5	1
Northern Territory ...	5	20	Natal ...	2	...
New Zealand ...	573	376	Transvaal ...	1	...
EUROPE—			S. Africa (Undefined)	27	13
England ...	3,794	2,186	Other African British Possessions ...	1	...
Wales ...	91	48	Other African Countries ...	1	...
Scotland ...	908	607	AMERICA—		
Ireland ...	519	401	Canada ...	36	9
Isle of Man...	8	3	Newfoundland ...	2	...
Other European British Possessions ...	8	4	Other American British Possessions ...	2	3
Austria-Hungary ...	22	5	Argentine Republic...	1	...
Belgium ...	4	2	Brazil ...	2	...
Denmark ...	54	12	Chile ...	2	...
France ...	29	13	Mexico ...	1	...
Germany ...	235	70	United States ...	106	27
Greece ...	11	1	Other American Countries ...	16	11
Italy ...	49	21	POLYNESIA—		
Netherlands ...	25	3	Fiji ...	10	9
Norway ...	26	3	Friendly Islands ...	1	...
Portugal ...	1	...	Papua ...	1	1
Russia ...	70	21	Other Polynesian British Possessions ...	4	1
Spain ...	3	1	New Caledonia ...	7	10
Sweden ...	45	6	New Hebrides ...	2	1
Switzerland ...	9	3	Samoa ...	...	1
Other European Countries ...	11	1	Other Polynesian Islands ...	2	1
ASIA—			South Sea Islands (so described) ...	3	1
British India ...	45	21	At sea ...		
Ceylon ...	6	2	Not stated ...		
Hong Hong ...	2	...	Total ...		
Straits Settlements ...	7	...	39,623		
Other Asiatic British Possessions ...	1	...	39,623		
Arabia ...	2	...			
China ...	45	6			
Japan ...	7	3			
Java ...	3	...			

(a) Exclusive of Western Australia.

7. **Occupations and Ages of Bridegrooms.**—A tabulation has been made of the occupations and ages of all males married in the Commonwealth in the years 1907 to 1912. In "Bulletin No. 30" the 1912 tabulation is shewn for orders of occupations: here it is repeated for classes only, with a subdivision of the Industrial class and of the class of Primary Producers. The average ages of the persons falling under those twelve subdivisions were determined, and it appears that, apart from the Indefinite class, which consists chiefly of persons who have retired from business and who are living on their own means, and where a high average age may naturally be expected, the average age ranges from 27.58 in the Manufacturing class to 32.09 years in the Pastoral class. The averages for five years 1907-1911 have been added for the purposes of comparison. The results obtained are shewn in the following table:—

OCCUPATIONS AND AGES OF BRIDEGROOMS, COMMONWEALTH, 1912.

Ages at Marriage.	Professional	Domestic.	Mercantile.	Transport and Communication.	Industrial.			Primary Producers.				
					Manu- facturing.	Building and Construction.	Indefinite Industrial Workers.	Agricultural.	Pastoral.	Mines and Quarries.	Other Primary Producers.	Indefinite.
16 years ...	...	...	1	1	1	...	3	...	...	...	...	...
17 " ...	...	1	2	4	10	4	11	...	...	...	...	1
18 " ...	3	3	23	29	47	11	60	4	...	13	...	1
19 " ...	14	16	66	70	104	48	156	29	3	29	...	1
20 " ...	20	18	136	119	190	84	253	67	9	54	...	...
21 " ...	78	44	311	312	447	185	621	171	35	122	21	2
22 " ...	100	72	414	367	484	226	696	233	54	140	21	3
23 " ...	148	67	523	400	592	279	801	304	69	160	29	4
24 " ...	197	77	597	414	587	300	780	372	89	157	26	4
25 " ...	223	70	619	388	536	288	711	427	72	144	27	9
26 " ...	223	79	596	404	512	266	691	389	88	133	24	3
27 " ...	192	79	555	303	422	226	630	385	76	130	26	3
28 " ...	222	64	431	284	393	208	542	347	94	110	17	7
29 " ...	149	50	369	242	303	151	416	321	76	93	17	3
30 " ...	134	37	328	191	242	109	372	259	63	68	14	2
31 " ...	106	35	261	148	192	74	245	231	75	50	10	2
32 " ...	106	29	219	151	163	87	264	204	75	48	12	4
33 " ...	67	24	185	97	116	59	208	155	46	31	5	3
34 " ...	64	25	179	82	102	46	157	141	51	32	9	1
35 to 39 years ...	256	89	540	263	324	100	628	533	151	131	27	8
40 " 44 " ...	124	63	263	104	138	96	305	267	72	84	10	12
45 " 49 " ...	62	34	163	99	110	69	182	156	59	41	11	3
50 years and upwards ...	102	35	189	84	149	111	214	191	65	52	10	49
Not stated ...	2	...	5	...	...	1	2	1	...	...	...	...
Total ...	2,602	1,011	6,981	4,536	6,164	3,118	8,948	5,188	1,328	1,822	325	124
Average age—years (1912)	30.75	30.29	29.45	28.70	27.58	30.33	28.57	30.85	32.09	28.94	29.54	41.90
" " (1907-1911)	31.12	30.32	29.73	28.65	28.27	29.11	28.83	30.99	32.50	29.14	29.43	41.60

The average age at marriage of brides has slowly risen from 25.56 years in 1907 to 25.74 years in 1912. The figures for the six years are:—1907, 25.56 years; 1908, 25.67 years; 1909, 25.74 years; 1910, 25.77 years; 1911, 25.74 years; and 1912, 25.74 years. For the five years 1907-11 the average age was 25.70 years, compared with 25.74 years in 1912.

8. **Fertility of Marriages.**—The quotient obtained by division of the nuptial births registered, say during the five years 1908 to 1912, by the number of marriages registered during the five years 1903 to 1907, *i.e.*, the period antecedent by five years to the period of the births, has been called the "fertility of marriages." This works out at 3.87, or in other words, the number of children to be expected from every marriage in the

Commonwealth is under four. This method, while not professing any claim to accuracy, generally furnishes results which agree fairly well with those found by more elaborate and careful investigation, but in this instance it is, owing chiefly to the fictitious increase in the number of births shewn in 1912, rather higher than for a number of years past. For the period 1907-11 the result was 3.43.

9. Registration of Marriages.—In all the States of the Commonwealth marriages may be celebrated either by ministers of religion, whose names are registered for that purpose with the Registrar-General, or by certain civil officers, in most cases district registrars. The percentage of marriages celebrated by ministers of religion has increased from 96.47 per cent. in 1902 to 96.81 per cent. in 1912. The figures for the individual States in 1912 were: New South Wales, 97.90 per cent.; Victoria, 97.70 per cent.; Queensland, 95.27 per cent.; South Australia, 95.73 per cent.; Western Australia, 89.58 per cent.; and Tasmania, 98.80 per cent. The registered ministers in 1912 belonged to more than forty different denominations, some of which, however, can hardly be regarded as having any valid existence. A number of these have been omitted from the tabulation, and are bracketed under the heading "Other Christians." The figures for 1912 are shewn in the following table:—

MARRIAGES IN EACH DENOMINATION, COMMONWEALTH, 1912.

Denomination.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	Fed. Ter.	Com- wealth.
Church of England ...	6,972	3,193	1,530	900	1,023	513	14	4	14,149
Roman Catholic Church ...	2,923	1,976	1,093	401	434	209	5	1	7,042
Presbyterian Church of Aust. .	2,330	2,306	801	212	226	170	...	1	6,046
Methodist Church ...	2,297	1,735	960	1,321	388	271	1	...	6,973
Congregational Church ...	1,058	1,142	156	267	84	149	...	...	2,856
Baptist Church ...	281	519	290	298	50	151	...	...	1,589
Church of Christ ...	206	260	15	182	22	3	...	...	688
Lutheran Church ...	44	78	172	220	5	...	...	...	519
Greek Orthodox Church ...	3	2	...	...	...	...	...	...	5
Unitarian Church ...	28	2	...	6	...	...	...	...	36
Salvation Army ...	56	53	42	42	11	12	...	...	216
Seventh-Day Adventists ...	13	13	6	9	5	2	...	...	48
Other Christians ...	45	150	290	23	2	5	...	...	515
Hebrew ...	60	38	5	2	10	1	...	...	116
Registrar's Office ...	350	270	266	173	263	18	4	...	1,344
Unspecified ...	...	1	1	...	1	2	...	...	5
Total ...	16,666	11,738	5,627	4,056	2,524	1,506	24	6	42,147

10. Mark Signatures.—The marriage registers afford some clue, even if an imperfect one, to the illiteracy of the adult population, since a small and constantly diminishing percentage of bridegrooms and brides sign the registers with marks.

(i.) *Males and Females, 1902 to 1912.* For a number of years, with the exception of 1905, 1908, 1910, and 1912, mark signatures by males have been slightly more numerous than those by females, the percentages for the Commonwealth during the past eleven years having been as follows:—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1902 to 1912.

Year. ...	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Male ...	1.21	1.17	0.95	0.91	0.92	0.81	0.71	0.65	0.56	0.56	0.43
Female	1.11	1.02	0.91	0.93	0.86	0.70	0.73	0.62	0.59	0.54	0.45

(ii.) *Mark Signatures in Commonwealth States, 1902 to 1912.* The following table shews that while the Tasmanian percentage has been the highest, and the Victorian the lowest, in each of the eleven years under review, there has been a marked decrease in every State :—

PERCENTAGE OF MARK SIGNATURES AT MARRIAGE, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Fed. Terr.	C'wealth.
1902 ...	1.22	0.61	1.93	1.12	0.69	3.12	14.29	...	1.16
1903 ...	1.10	0.60	1.86	1.22	0.75	2.38	20.83	...	1.10
1904 ...	0.90	0.54	1.72	0.65	0.53	2.85	...	...	0.93
1905 ...	1.12	0.44	1.39	0.83	0.57	2.12	...	...	0.92
1906 ...	0.94	0.43	1.67	0.65	0.66	2.18	25.00	...	0.89
1907 ...	0.87	0.36	1.14	0.55	0.64	2.02	...	...	0.76
1908 ...	0.79	0.33	1.20	0.56	0.82	1.57	...	...	0.72
1909 ...	0.60	0.22	1.16	0.55	0.68	2.07	30.00	...	0.64
1910 ...	0.61	0.29	0.92	0.44	0.52	1.17	29.41	...	0.58
1911 ...	0.54	0.22	0.84	0.46	0.78	1.96	15.00	(a)...	0.55
1912 ...	0.33	0.27	0.60	0.54	0.61	1.29	25.00	...	0.44

(a) Part of New South Wales prior to 1911.

A complete disappearance of mark signatures is hardly to be expected, for the available information tends to shew that two-thirds of those who sign with marks are natives of their respective States, who apparently have not made use of the advantages offered to them by the State schools.

§ 3. Deaths.

1. **Male and Female Deaths, 1902 to 1912.**—The total number of deaths registered in the Commonwealth from 1902 to 1912 inclusive, gives an annual average of 26,621 males and 19,591 females, the details being as follow :—

MALE DEATHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Fed. Terr.	C'wealth.
1902 ...	9,535	9,152	3,924	2,316	1,832	1,044	73	...	27,876
1903 ...	9,428	8,626	3,951	2,171	1,829	1,136	71	...	27,212
1904 ...	8,733	7,992	3,259	2,019	1,823	1,061	52	...	24,939
1905 ...	8,709	8,273	3,499	2,003	1,728	1,061	38	...	25,311
1906 ...	8,715	8,342	3,212	2,053	1,878	1,118	56	...	25,374
1907 ...	9,444	7,977	3,482	1,998	1,866	1,083	89	...	25,939
1908 ...	9,298	8,816	3,500	2,029	1,800	1,112	77	...	26,632
1909 ...	9,184	8,070	3,419	2,080	1,671	1,030	60	...	25,514
1910 ...	9,339	8,128	3,594	2,163	1,760	1,098	72	...	26,154
1911 ...	9,973	8,355	4,060	2,179	1,923	1,037	59	(a) 5	27,591
1912 ...	11,094	9,072	4,305	2,409	2,210	1,130	61	4	30,285
Rate, (b) 1912	12.17	13.40	12.56	11.24	12.84	11.50	22.04	3.61	12.51

(a) Part of New South Wales prior to 1911. (b) Number of deaths per 1000 of mean population.

FEMALE DEATHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W Aus.	Tas.	North. Terr.	Fed. Terr.	C'wealth.
1902	7,111	7,025	2,280	1,920	991	870	5	...	20,202
1903	7,069	6,969	2,395	1,702	959	980	7	...	20,081
1904	6,627	6,401	1,991	1,700	994	913	7	...	18,633
1905	6,269	6,403	2,004	1,758	981	783	5	...	18,203
1906	6,260	6,895	1,883	1,819	1,206	893	3	...	18,959
1907	6,967	6,562	2,116	1,738	1,065	915	3	...	19,366
1908	6,757	6,950	2,180	1,805	1,079	1,017	6	...	19,794
1909	6,626	6,366	2,111	1,702	1,033	812	8	...	18,658
1910	6,819	6,604	2,150	1,851	980	1,022	10	...	19,436
1911	7,173	6,861	2,484	1,859	1,000	890	6	(a) 5	20,278
1912	7,768	7,517	2,616	1,927	1,125	927	6	6	21,892
Rate, (b) 1912	9.42	11.07	9.05	9.30	8.70	9.93	10.15	6.46	9.84

(a) Part of New South Wales prior to 1911. (b) Number of deaths per 1000 of mean population.

2. **Male and Female Death Rates, 1912.**—The crude male and female death rates for 1912 only are given, viz., in the last line of the preceding tables. Victoria has the highest rate both for males and for females, while South Australia has the lowest male and Western Australia the lowest female death rate. The rates for the two Territories are based on very small numbers, and comparisons with the States are misleading.

Owing to differences in the age constitution of the six States, the crude rates are not, however, strictly comparable, but for the purposes of calculating the "Index of Mortality" (see page 179) a distribution into five age-groups has, however, been made, and the death rates are shown for males and females in each State in five-year age groups for the three years 1910-1912 on page 174.

3. **Death Rates of Various Countries.**—A comparison with foreign States is, for the same reason, apt to shew the Commonwealth in too favourable a light, but even if an allowance for the different age constitution were made, it would still be found occupying a very enviable position. The following table gives particulars of the death rates of various countries for the latest available years:—

DEATH RATES (a) OF VARIOUS COUNTRIES.

Country.	Year.	Crude Death Rate.	Country.	Year.	Crude Death Rate.
New Zealand	1912	8.9	Finland	1911	16.5
South Australia	1912	10.3	Ireland	1911	16.5
Tasmania	1912	10.7	Prussia	1911	17.2
New South Wales	1912	10.9	German Empire	1911	17.3
Queensland	1912	11.0	France	1911	19.6
Western Australia	1912	11.1	Italy	1911	21.4
Commonwealth	1912	11.2	Servia	1911	21.8
Victoria	1912	12.2	Austria	1911	21.9
Canada (Ontario)	1911	12.6	Japan	1909	22.0
Norway	1911	13.2	Jamaica	1911	22.1
Denmark	1911	13.6	Spain	1911	23.2
Sweden	1911	13.8	Bulgaria	1908	24.3
Netherlands	1911	14.5	Hungary	1911	25.1
England and Wales	1911	14.6	Rumania	1911	25.7
United Kingdom	1911	14.8	Chile	1911	31.1
Scotland	1911	15.1	Russia, European	1905	31.1
Switzerland	1910	15.1	Ceylon	1911	34.8
Belgium	1910	15.2			

(a) Number of deaths per 1000 of mean population.

4. **Total Deaths, 1902 to 1912.**—The total number of deaths in each of the Commonwealth States during the eleven years 1902 to 1912, is shewn below:—

TOTAL DEATHS, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1902 ...	16,646	16,177	6,204	4,236	2,823	1,914	78	...	48,078
1903 ...	16,497	15,595	6,346	3,873	2,788	2,116	78	...	47,293
1904 ...	15,860	14,393	5,250	3,719	2,817	1,974	59	...	43,572
1905 ...	14,978	14,676	5,503	3,761	2,709	1,844	43	...	43,514
1906 ...	14,975	15,237	5,095	3,872	3,084	2,011	59	...	44,333
1907 ...	16,411	14,539	5,598	3,736	2,931	1,998	92	...	45,305
1908 ...	16,055	15,766	5,680	3,834	2,879	2,129	83	...	46,426
1909 ...	15,810	14,436	5,530	3,782	2,704	1,842	68	...	44,172
1910 ...	16,158	14,732	5,744	4,014	2,740	2,120	82	...	45,590
1911 ...	17,146	15,216	6,544	4,038	2,923	1,927	65	(a) 10	47,869
1912 ...	18,862	16,589	6,921	4,336	3,335	2,057	67	10	52,177

(a) Part of New South Wales prior to 1911.

5. **Crude Death Rates, 1902 to 1912.**—The death rate for 1912 shewed an increase on that for 1911 in all the States. The rates are lower than those experienced in 1902 and 1903, but are generally higher than those of any other year of the period, South Australia, Western Australia, and Tasmania being exceptions to this rule. The Commonwealth rate for 1912 was higher than in any of the other years of the period under review excepting the years 1902 and 1903.

CRUDE DEATH RATE (a), COMMONWEALTH, 1902 to 1912 (b).

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Terr.	Federal Terr.	C'wealth.
1902 ...	11.98	13.40	12.15	11.90	13.79	10.93	17.05	...	12.49
1903 ...	11.67	12.94	12.33	10.90	12.69	11.73	17.91	...	12.15
1904 ...	10.67	11.97	10.06	10.42	12.04	10.79	13.98	...	11.05
1905 ...	10.18	12.17	10.40	10.45	10.98	10.00	10.42	...	10.88
1906 ...	9.95	12.55	9.50	10.66	12.12	10.91	14.84	...	10.92
1907 ...	10.63	11.86	10.31	10.16	11.47	10.81	24.07	...	10.99
1908 ...	10.20	12.71	10.26	10.14	11.17	11.36	22.71	...	11.07
1909 ...	9.89	11.45	9.70	9.74	10.27	9.68	19.22	...	10.33
1910 ...	9.89	11.49	9.71	10.09	10.11	11.10	24.10	...	10.43
1911 ...	10.32	11.52	10.65	9.82	10.19	10.13	19.58	(c) 5.62	10.66
1912 ...	10.86	12.23	10.96	10.28	11.06	10.73	19.95	4.91	11.23

(a) Number of deaths per thousand of mean population for year. (b) Rates corrected in view of Census Returns. (c) Part of New South Wales prior to 1911.

6. **Male and Female Death Rates, 1902 to 1912.**—The rise in the Commonwealth rate from 1905 to 1907 was due to an increase in the female death rate, while the increase in 1908 was practically limited to the male death rate, as the subjoined table shews. The decrease from 1908 to 1909 was fairly equal for the male and female rates, and the increase in 1910 was due to a rise in the female rate. From 1910 to 1911, and again from 1911 to 1912 the increase in the male rate was about one and a half times as strong as that in the female rate.

MALE AND FEMALE DEATH RATES (a), COMMONWEALTH, 1902 to 1912 (b).

Year.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Male rate	13.83	13.37	12.12	12.14	12.01	12.11	12.24	11.51	11.54	11.82	12.51
F'male „	11.02	10.80	9.88	9.50	9.73	9.77	9.81	9.06	9.24	9.40	9.84
Crude total rate	12.49	12.15	11.05	10.88	10.92	10.99	11.07	10.33	10.43	10.66	11.23

(a) Number of deaths per thousand of mean population. (b) Rates corrected in view of Census Returns.

7. Infantile Death Rate.—(i.) *Deaths and Death Rates of Male and Female Infants, 1902 to 1912.* A marked improvement has taken place in the infantile death rate since 1902, in which year it stood at 107.15 per thousand births registered, while in 1912 it had fallen to 71.74 per thousand, a rate lower than that experienced in any previous year, 1909 and 1911 excepted. In the following table, which shews both the total number of deaths of children under one year and the rate per thousand births since 1902, males and females are distinguished. The universal experience that during the first few years of life the excess of male births disappears as a consequence of the higher death rate of male infants is shewn by the fact that out of 628,609 male infants born from 1902 to 1912, 56,200 died during their first year of life, while of 597,599 female infants the number who died was only 44,297:—

**NUMBER OF INFANTILE DEATHS AND RATE OF INFANTILE MORTALITY,
COMMONWEALTH, 1902 to 1912.**

Year.	Registered Deaths under one year.			Rate of Infantile Mortality (a).		
	Males.	Females.	Total.	Males.	Females.	Total.
1902 ...	6,008	5,004	11,012	114.19	99.76	107.15
1903 ...	6,004	4,959	10,963	119.11	103.23	111.36
1904 ...	4,713	3,800	8,513	88.33	74.87	81.77
1905 ...	4,884	3,696	8,580	90.62	72.41	81.76
1906 ...	5,002	3,981	8,983	90.10	76.01	83.26
1907 ...	4,993	3,952	8,945	88.89	73.38	81.06
1908 ...	4,885	3,791	8,676	85.53	69.65	77.78
1909 ...	4,604	3,559	8,163	78.73	64.02	71.56
1910 ...	4,916	3,822	8,738	81.65	67.53	74.81
1911 ...	4,745	3,624	8,369	75.91	60.72	68.49
1912 ...	5,446	4,102	9,548	80.06	63.04	71.74

(a) Number of deaths under 1 year per 1000 births registered.

(ii.) *Infantile Mortality, 1902 to 1912.* Divided among the States and Territories, the rate of infantile mortality during the last eleven years was as follows:—

RATE (a) OF INFANTILE MORTALITY, COMMONWEALTH, 1902 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Terr.	Federal Territory.	Com'-wealth.
1902 ...	109.74	108.60	100.17	93.76	142.01	79.06	200.00	...	107.15
1903 ...	110.35	106.40	119.88	96.76	141.22	110.83	181.82	...	111.36
1904 ...	82.42	77.92	76.13	70.00	113.02	90.70	212.12	...	81.77
1905 ...	80.55	83.30	75.52	72.80	104.19	80.65	111.11	...	81.76
1906 ...	74.53	92.92	74.68	75.66	110.00	90.19	160.00	...	83.26
1907 ...	88.46	72.60	77.65	66.23	97.51	82.97	185.19	...	81.06
1908 ...	75.20	86.05	70.67	69.50	84.72	75.16	58.82	...	77.78
1909 ...	73.87	71.36	71.50	60.91	78.01	64.91	111.11	...	71.56
1910 ...	74.71	76.88	62.90	70.21	78.18	101.68	200.00	...	74.81
1911 ...	69.46	68.70	65.36	60.60	76.01	73.39	96.77	(b) 33.34	68.49
1912 ...	71.00	74.48	71.73	61.68	82.06	66.80	121.21	76.92	71.74

(a) Number of deaths under 1 year per 1000 births registered. (b) Part of New South Wales prior to 1911.

The movement has been a fairly regular one, shewing an increase in the rate during 1902 and 1903, and a fall since the latter year, so that the 1909 rate was lower than that for 1902 in every State. The regrettable increase in the Victorian rate for 1908 over that of 1907 was wholly due to the large mortality caused by the phenomenal heat of January, 1908. With the exception of Queensland, where the 1908 rate was exceptionally low, the 1909 rate was the lowest ever experienced up to that date in any of the States. A further rise occurred in every State in 1910, with the exception of Queensland, which was counterbalanced by a considerable decrease during 1911 in every State

but Queensland. In 1912 the rate shewed a rise in every State except Tasmania, the rise amounting to about 1 per 1000 in South Australia, $1\frac{1}{2}$ per 1000 in New South Wales, and to 6 per 1000 in Victoria, Queensland, and Western Australia. The Commonwealth rate rose by more than 3 per 1000, and was a little higher than in 1909.

(iii.) *Infantile Mortality in Various Countries and Cities.* Compared with European countries the cities and States of the Commonwealth occupy a very enviable position, and it may be pointed out that experience has shewn that a high birth rate is often, though not invariably, accompanied by a high infantile death rate. The figures in the subjoined tables relate to the latest years for which returns are available:—

RATE (a) OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	Country.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
New Zealand ...	1912	51	26.5	England and Wales	1911	130	24.4
South Australia ...	1912	62	28.7	Belgium ...	1910	134	23.7
Norway ...	1910	67	26.1	Netherlands ...	1911	137	27.8
Tasmania ...	1912	67	30.5	Servia ...	1910	138	38.5
New South Wales ...	1912	71	29.9	Italy ...	1910	142	33.3
Commonwealth ...	1912	72	28.7	Spain ...	1907	158	33.6
Queensland ...	1912	72	29.7	Japan ...	1909	166	34.2
Victoria ...	1912	74	26.4	Bulgaria ...	1903	170	40.4
Sweden ...	1910	75	24.7	Jamaica ...	1911	187	39.0
Western Australia ...	1912	82	28.8	Prussia ...	1911	188	29.4
Ireland ...	1911	94	23.2	German Empire ...	1911	192	28.6
Switzerland ...	1910	105	25.0	Rumania ...	1911	197	43.0
United Kingdom ...	1910	105	25.0	Austria ...	1911	207	31.4
Denmark ...	1911	106	26.8	Hungary ...	1911	207	35.0
Scotland ...	1910	108	26.2	Ceylon ...	1911	218	37.9
France ...	1910	111	19.6	Russia, European	1904	232	48.5
Finland ...	1911	114	29.1	Chile ...	1911	332	38.5
Canada (Ontario) ...	1911	117	21.7				

(a) Number of deaths under 1 year per 1000 births registered. (b) Number of births per 1000 of mean population.

RATE (a) OF INFANTILE MORTALITY IN VARIOUS CITIES.

City.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)	City.	Year.	Rate of Infantile Mortality. (a)	Crude Birth Rate. (b)
Amsterdam ...	1912	64	23.3	Belfast ...	1912	129	27.8
The Hague ...	"	66	23.6	Hamburg ...	"	130	21.8
Sydney ...	"	76	29.9	Leipzig ...	"	133	22.1
Rotterdam ...	"	79	29.0	Munich ...	"	134	21.9
Brisbane ...	"	82	32.8	Prague ...	"	139	19.9
Stockholm ...	"	82	21.0	Dublin (Registration area)	"	140	27.4
Melbourne ...	"	90	27.5	Budapest ...	"	141	25.5
London ...	"	91	24.5	Berlin ...	"	142	20.4
Buenos Aires ...	"	96	35.3	Vienna ...	"	149	19.1
Frankfort-on-Maine ...	"	102	20.9	Cologne ...	"	152	26.8
Milan ...	"	102	23.4	Breslau ...	"	163	26.3
Paris ...	"	103	16.8	Trieste ...	"	184	29.7
Christiania ...	"	107	22.7	Rio de Janeiro ...	"	185	28.2
Copenhagen ...	"	108	24.9	Montreal ...	1911	242	37.8
Edinburgh ...	"	113	20.9	St. Petersburg	1912	249	26.5
Toronto ...	1911	114	22.2	Moscow ...	"	333	28.9
Dresden ...	1912	116	20.2				
Glasgow ...	"	124	28.1				

(a) Number of deaths under 1 year per 1000 births registered. (b) Number of births per 1000 of mean population.

(iv.) *The Effect of Infantile Mortality on Birth Rate.* It has been contended by certain investigators that the birth-rate question is intimately related to that of infantile mortality, and that in many cases a declining birth rate may be to a large extent accounted for by a decline in the infantile death rate, since, in the case in which an infant has survived, the period elapsing before the birth of the next child is likely to be longer than in the case in which the infant has died. It may indeed be readily admitted that in any community the birth rate may be affected in a definite way by variations of infantile mortality, but careful investigation of the question serves to shew that, whether considered from the theoretical aspect with a view to determining the *maximum* and the *probable* effects which a given change in the rate of infantile mortality would produce in the birth rate, or from the practical point of view by observing the fluctuations in the birth rates of various countries which have been collateral with changes in their rates of infantile mortality, there is little ground for the contention that the rate of infantile mortality is an important factor in determining the variations in the birth rate. One calculation which has been made on the basis of normal Australian conditions indicates that the *maximum* effect of increasing the rate of infantile mortality 100 per cent. would, in the absence of other disturbing causes, be to increase the birth rate by only $3\frac{1}{4}$ per cent., whilst the *probable* effect would be considerably less than this. In other words, the *maximum* effect of an increase in the rate of infantile mortality from 100 to 200 per 1000 births would be to increase the birth rate from say 30 to 31 per 1000 of population. It may be noted too, that although in some countries an increase in birth-rate accompanies an increase in the rate of infantile mortality, in others the birth rate would appear to be quite unaffected by such an increase, while in the case of England and Wales, Scotland, and Ireland, the tendency apparently exhibited is for an increase in the rate of infantile mortality to be associated with a decrease in the birth rate. The conclusion which these results appear to warrant is that although infantile mortality undoubtedly tends on the whole to increase the birth rate, the practical effect produced is so slight that the existence of such a relation may in any instance be quite masked by more important causes of variation.

8. **Deaths in Age-Groups, 1902 to 1912.**—A distribution into age-groups has been made of the 508,329 deaths which occurred in the Commonwealth from 1902 to 1912, and the results are tabulated for each State. It is, however, sufficient here to shew the results for the Commonwealth as a whole, which are as follow:—

DEATHS IN AGE-GROUPS, COMMONWEALTH, 1902 to 1912.

Ages.	Males.	Females.	Total.	Percentage of Total Males.	Percentage of Total Females.	Percentage of Total.
Under 1 year ...	56,200	44,290	100,490	19.19	20.55	19.77
1 year and under 5 ...	16,770	15,282	32,002	5.73	7.07	6.80
5 years and under 20 ...	16,618	14,930	31,548	5.67	6.93	6.21
20 years and under 40 ...	39,533	35,005	74,538	13.50	16.24	14.66
40 years and under 60 ...	59,090	34,583	93,673	20.18	16.05	18.43
60 years and under 65 ...	16,844	10,266	27,110	5.75	4.76	5.33
65 years and over ...	87,200	61,090	148,290	29.78	28.35	29.17
Age not stated ...	572	106	678	0.20	0.05	0.13
Total ...	292,827	215,502	508,329	100.00	100.00	100.00

9. **Deaths at Single Ages and in Age-Groups, 1912.**—The 52,177 deaths which were registered in the Commonwealth in the year 1912 will be found tabulated under single years, and in groups of five years for each State and Territory, in "Bulletin No.

30, Commonwealth Demography, 1912." It has been thought advisable to tabulate the deaths during the first two years of life in greater detail. The first month has, therefore, been shewn in weeks, and the twenty-three months up to the end of the second year in months. This tabulation shews a great number of children dying during the first week, the number gradually diminishing towards the end of the second year. The particulars relating to the Commonwealth are given in the following table:—

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1912.

COMMONWEALTH.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 1 week ...	1,670	1,146	2,816	10 years ...	75	73	148
1 week and under 2 ...	330	205	535	11 " ...	81	82	163
2 weeks " " 3 ...	246	168	414	12 " ...	83	68	151
3 " " " 4 ...	205	151	356	13 " ...	76	76	152
				14 " ...	78	79	155
Total under one month ...	2,451	1,670	4,121	Total 10 years and under 15	391	378	769
1 month and under 2 ...	469	371	840	15 years ...	98	72	170
2 months " " 3 ...	391	305	696	16 " ...	101	84	185
3 " " " 4 ...	343	298	641	17 " ...	127	106	233
4 " " " 5 ...	330	239	569	18 " ...	128	111	239
5 " " " 6 ...	296	209	505	19 " ...	150	128	278
6 " " " 7 ...	253	195	448				
7 " " " 8 ...	208	195	403	Total 15 years and under 20	604	501	1,105
8 " " " 9 ...	221	155	376	20 years ...	147	161	308
9 " " " 10 ...	178	174	352	21 " ...	196	146	342
10 " " " 11 ...	161	146	309	22 " ...	164	193	347
11 " " " 12 ...	145	143	288	23 " ...	202	178	380
				24 " ...	197	175	372
Total under 1 year ...	5,446	4,102	9,548	Total 20 years and under 25	906	843	1,749
12 months and under 13 ...	335	260	604	25 years ...	216	154	370
13 " " " 14 ...	73	96	169	26 " ...	204	173	377
14 " " " 15 ...	72	83	155	27 " ...	213	153	366
15 " " " 16 ...	85	74	159	28 " ...	183	169	352
16 " " " 17 ...	84	64	148	29 " ...	168	186	354
17 " " " 18 ...	49	42	91				
18 " " " 19 ...	99	65	164	Total 25 years and under 30	984	835	1,519
19 " " " 20 ...	34	34	68	30 years ...	222	159	381
20 " " " 21 ...	57	41	98	31 " ...	163	145	308
21 " " " 22 ...	44	43	87	32 " ...	204	175	379
22 " " " 23 ...	35	36	71	33 " ...	211	161	372
23 " " " 24 ...	34	22	56	34 " ...	194	137	331
Total under 2 years ...	6,447	4,971	11,418	Total 30 years and under 35	994	777	1,771
2 years ...	369	330	699	35 years ...	233	166	399
3 " ...	238	217	455	36 " ...	204	174	378
4 " ...	168	180	348	37 " ...	235	184	419
				38 " ...	235	186	421
Total under 5 years ...	7,222	5,698	12,920	39 " ...	224	165	389
5 years ...	162	132	294				
6 " ...	140	124	264	Total 35 years and under 40	1,131	875	2,006
7 " ...	114	102	216				
8 " ...	83	92	175				
9 " ...	84	77	161				
Total 5 years and under 10	583	527	1,110				

DEATHS AT SINGLE AGES AND IN AGE-GROUPS, 1912—Continued.

Ages.			Males.	Females.	Total.	Ages.			Males.	Females.	Total.
40 years	...	...	297	186	483	75 years	...	...	477	352	829
41 "	...	...	195	153	348	76 "	...	...	487	369	856
42 "	...	...	281	188	469	77 "	...	...	429	293	722
43 "	...	...	244	148	392	78 "	...	...	474	368	842
44 "	...	...	260	181	441	79 "	...	...	414	280	694
Total 40 years and under 45			1,277	856	2,133	Total 75 years and under 80			2,281	1,662	3,943
45 years	...	...	379	195	574	80 years	...	...	425	281	706
46 "	...	...	328	149	477	81 "	...	...	311	238	549
47 "	...	...	294	184	478	82 "	...	...	342	281	623
48 "	...	...	339	174	513	83 "	...	...	281	218	499
49 "	...	...	315	209	524	84 "	...	...	274	229	503
Total 45 years and under 50			1,655	911	2,566	Total 80 years and under 85			1,633	1,247	2,880
50 years	...	...	421	207	628	85 years	...	...	221	174	395
51 "	...	...	279	193	472	86 "	...	...	189	146	335
52 "	...	...	371	200	571	87 "	...	...	123	120	243
53 "	...	...	342	216	558	88 "	...	...	103	100	203
54 "	...	...	351	211	562	89 "	...	...	81	81	162
Total 50 years and under 55			1,824	1,027	2,851	Total 85 years and under 90			717	621	1,338
55 years	...	...	333	180	513	90 years	...	...	79	72	151
56 "	...	...	359	207	566	91 "	...	...	39	51	90
57 "	...	...	353	162	515	92 "	...	...	14	51	95
58 "	...	...	350	188	538	93 "	...	...	25	42	67
59 "	...	...	348	177	525	94 "	...	...	33	27	60
Total 55 years and under 60			1,743	914	2,657	Total 90 years and under 95			220	243	463
60 years	...	...	416	203	619	95 years	...	...	21	12	33
61 "	...	...	275	170	445	96 "	...	...	21	22	43
62 "	...	...	358	226	584	97 "	...	...	8	7	15
63 "	...	...	359	213	572	98 "	...	...	9	8	17
64 "	...	...	350	218	568	99 "	...	...	4	5	9
Total 60 years and under 65			1,758	1,030	2,788	Total 95 yrs. and under 100			63	54	117
65 years	...	...	457	261	718	100 years	...	...	3	2	5
66 "	...	...	357	217	574	102 "	...	...	2	3	5
67 "	...	...	367	265	632	103 "	...	...	...	1	1
68 "	...	...	457	299	756	104 "	...	...	1	1	2
69 "	...	...	359	305	664	105 "	...	...	1	...	1
Total 65 years and under 70			1,997	1,347	3,344	107 "	...	...	1	...	1
70 years	...	...	500	321	821	108 "	...	...	...	1	1
71 "	...	...	367	232	599	Total 100 years and over...			8	8	16
72 "	...	...	494	332	826	Age not stated			94	18	11
73 "	...	...	435	323	758	Total all ages			30,285	21,892	52,177
74 "	...	...	404	312	716						
Total 70 years and under 75			2,200	1,520	3,720						

The following tables shew the death rate per 1000 living at each age for the three years 1910, 1911 and 1912. The Northern Territory is included with South Australia, and the Federal Territory with New South Wales :—

DEATHS.

AVERAGE ANNUAL DEATH RATES PER 1000 LIVING IN VARIOUS AGE GROUPS, 1910 to 1912.

MALES.

Age Group.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
0 to 4 years	25.40	24.71	23.30	21.30	28.44	24.65	24.71
5 " 9 "	2.11	2.39	2.39	1.85	2.61	2.53	2.26
10 " 14 "	1.75	1.69	1.74	1.40	2.16	1.70	1.72
15 " 19 "	2.42	2.41	2.92	2.43	2.86	2.59	2.52
20 " 24 "	3.37	3.27	4.83	3.00	5.17	3.57	3.65
25 " 29 "	3.91	4.13	5.57	3.57	5.86	4.49	4.35
30 " 34 "	4.90	4.83	5.96	5.40	6.75	3.77	5.20
35 " 39 "	6.08	6.31	7.54	7.15	8.41	6.28	6.68
40 " 44 "	8.25	8.26	9.65	8.31	10.37	6.17	8.58
45 " 49 "	10.91	11.05	13.83	10.27	14.96	9.25	11.58
50 " 54 "	14.78	15.33	17.77	13.02	17.66	14.08	15.36
55 " 59 "	21.93	21.41	23.01	19.99	24.65	16.24	21.67
60 " 64 "	30.99	31.52	31.25	31.94	35.06	28.39	31.88
65 " 69 "	45.80	50.53	51.53	45.94	45.96	38.29	47.69
70 " 74 "	71.49	74.28	70.94	58.38	78.74	58.79	70.88
75 " 79 "	117.05	115.68	112.40	99.49	110.54	108.60	114.04
80 " 84 "	181.34	174.56	190.89	165.68	185.23	148.67	176.32
85 " 89 "	252.58	270.76	202.56	225.42	328.21	313.87	257.73
90 and over	375.35	365.88	272.73	279.57	321.43	465.61	357.11

FEMALES.

0 to 4 years	20.96	19.79	20.07	16.96	21.76	21.27	20.22
5 " 9 "	1.78	2.27	2.29	1.71	2.58	1.88	2.04
10 " 14 "	1.41	1.81	1.45	1.25	1.77	2.51	1.59
15 " 19 "	1.96	2.42	2.20	2.19	2.01	3.47	2.22
20 " 24 "	3.22	3.74	3.76	3.44	3.82	4.09	3.53
25 " 29 "	4.02	4.31	4.68	4.79	4.42	4.66	4.31
30 " 34 "	4.51	4.98	4.46	4.92	4.88	4.93	4.73
35 " 39 "	5.84	6.02	5.79	5.71	6.15	7.68	5.97
40 " 44 "	6.24	6.63	7.11	5.80	6.73	5.67	6.44
45 " 49 "	7.63	8.05	9.07	7.91	8.40	7.02	7.98
50 " 54 "	11.22	11.30	11.73	9.72	11.82	8.76	11.07
55 " 59 "	14.33	15.55	14.13	12.63	14.18	15.80	14.60
60 " 64 "	21.69	22.27	21.64	20.54	20.44	19.50	21.60
65 " 69 "	37.81	36.48	34.69	35.01	34.59	35.09	36.47
70 " 74 "	55.75	58.36	57.82	48.28	54.52	55.11	56.13
75 " 79 "	97.62	98.27	86.11	91.32	92.45	93.30	95.91
80 " 84 "	154.31	157.19	138.33	137.97	144.14	150.77	151.89
85 " 89 "	184.60	225.65	200.82	202.17	186.67	254.45	208.59
90 and over	307.43	361.44	351.52	328.17	358.97	317.88	334.87

PERSONS.

0 to 4 years	23.21	22.29	21.72	19.16	25.15	23.00	22.50
5 " 9 "	1.95	2.33	2.34	1.78	2.60	2.21	2.15
10 " 14 "	1.58	1.75	1.60	1.33	1.97	2.10	1.66
15 " 19 "	2.19	2.42	2.57	2.31	2.45	3.03	2.37
20 " 24 "	3.30	3.51	4.33	3.22	4.60	3.84	3.59
25 " 29 "	3.96	4.22	5.17	4.17	5.29	4.58	4.33
30 " 34 "	4.71	4.92	5.29	5.16	6.00	4.94	4.97
35 " 39 "	5.97	6.16	6.78	6.44	7.51	6.94	6.34
40 " 44 "	7.31	7.44	8.58	7.09	9.06	5.94	7.59
45 " 49 "	9.45	9.59	11.95	9.14	12.73	8.20	9.96
50 " 54 "	13.25	13.40	15.48	11.49	15.64	11.63	13.48
55 " 59 "	18.63	18.52	19.59	16.67	20.87	16.04	18.52
60 " 64 "	26.79	26.86	27.44	26.48	29.25	24.08	26.87
65 " 69 "	42.18	43.26	44.44	40.58	41.22	36.66	42.37
70 " 74 "	64.41	65.98	65.87	53.36	68.67	56.91	63.91
75 " 79 "	108.56	107.11	101.89	95.17	103.30	100.66	105.58
80 " 84 "	169.10	171.29	166.15	150.82	170.12	149.75	164.97
85 " 89 "	217.51	248.40	201.72	211.72	266.67	284.83	232.64
90 and over	337.70	363.94	308.54	307.81	333.33	404.98	345.44

The tables shew a high death rate for children under five years of age, which rapidly diminishes until at ages 10 to 14, a rate of 1.66 per 1000 was experienced, which was the lowest at any age. The rate then gradually increases with increasing age until, at the ages 90 and over, more than one-third die every year.

10. **Deaths of Centenarians, 1912.**—Particulars as to the sixteen persons who died in 1912, aged 100 years and upwards, are given in the following table. It must, of course, be understood that while the Registrars-General of the various States take the greatest care to have statements as to abnormally high ages verified as far as possible, no absolute reliance can be placed on the accuracy of the ages shewn, owing to the well-known tendency of very old people to overstate their ages. The fact must not be lost sight of in connection with this question, that while parish registers in the United Kingdom often date very far back, compulsory registration of births dates practically only from 1874, the Act passed in 1836 having left many loop-holes open for those unwilling to register the births of their children.

DEATHS OF CENTENARIANS, 1912.—COMMONWEALTH.

MALES.

Age	Locality where Death occurred.	State.	Cause of Death.	Occupation.	Birth-place.	Length of Residence in Commonwealth.
Yrs						
107	Ballarat...	Victoria...	Hypostatic pneumonia	Farmer...	Scotland...	92 years
105	Carcoar...	N.E.W.	Senility	"	Ireland...	80
104	Hobart...	Tasmania...	"	Cook	England...	Not stated
102	Sydney...	N.S.W.	Cancer of stomach	Seaman*	India	2 months
102	Grafton...	"	Senility	Teamster	Ireland	77 years
100	Hay...	"	Senile myocarditis	None	China	Not stated
100	Granville...	"	Senility	Farmer	"	"
100	"	"	Carcinoma of mouth	Labourer..	Canada	62 years

FEMALES.

108	Young...	N.S.W.	Senility	"	Ireland...	47 years
104	Sydney...	"	"	"	"	Not stated
103	Benalla...	Victoria	"	"	"	60 years
102	Bathurst	N.S.W.	"	"	"	82
102	Adelaide	S. Australia	Diarrhoea	"	England	52
102	Scone...	N.S.W.	Senility	"	Ireland	80
100	Grafton...	"	"	"	N.S.W.	Native
100	Devonport	Tasmania...	"	"	Ireland	67 years

* 88 years in the P. and O. Co.'s service.

11. **Length of Residence in the Commonwealth of Persons who Died in 1912.**—The length of residence in the Commonwealth of all persons whose deaths were registered in the year 1912 has been tabulated for all the States, and a summary of the results is shewn below:—

LENGTH OF RESIDENCE IN COMMONWEALTH OF PERSONS WHO DIED IN 1912.

Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.	Length of Residence.	Male Deaths.	Female Deaths.	Total Deaths.
Born in the C'wealth...	16,453	13,604	30,057	Resident 25 to 29 years	1,041	605	1,646
Resident under 1 year	403	161	564	" 30 to 34 "	1,045	493	1,538
" 1 year	164	83	247	" 35 to 39 "	680	372	1,052
" 2 years	120	38	158	" 40 to 44 "	853	464	1,317
" 3, "	93	38	131	" 45 to 49 "	961	744	1,705
" 4 "	59	20	79	" 50 to 54 "	1,524	1,069	2,623
" 5 "	57	20	77	" 55 to 59 "	1,652	1,493	3,145
" 6 "	46	18	66	" 60 to 64 "	1,131	970	2,101
" 7 "	31	27	58	" 65 yrs. & over	507	546	1,053
" 8 "	40	11	51	Length of residence not stated...	2,252	591	2,843
" 9 "	27	12	39				
" 10 to 14 years...	217	74	291				
" 15 to 19 "	263	69	352				
" 20 to 24 "	664	320	984	Total ...	30,285	21,892	52,177

12. Birthplaces of Persons who Died in 1912.—In the following table are shewn the birthplaces of persons whose deaths were registered in 1912:—

BIRTHPLACES OF PERSONS WHO DIED IN 1912.

COMMONWEALTH.

Birthplaces.	Males.	Females.	Total.	Birthplaces.	Males.	Females.	Total.
AUSTRALASIA—				Philippine Islands	12	...	12
Commonwealth of				Syria ...	10	8	18
Australia—				Other Asiatic			
New South Wales ...	6,396	5,170	11,566	Countries ...	39	2	41
Victoria ...	5,047	4,285	9,332	AFRICA—			
Queensland ...	1,709	1,473	3,182	Cape of Good Hope	3	...	3
South Australia ...	1,533	1,244	2,777	Mauritius ...	11	3	14
Western Australia...	722	552	1,274	Natal ...	1	...	1
Tasmania ...	1,038	879	1,917	Orange River ...	1	...	1
Northern Territory	8	1	9	S. Africa (undefined)	20	12	32
New Zealand ...	145	101	246	Egypt ...	1	...	1
EUROPE—				Other African			
England ...	5,851	3,615	9,466	Countries ...	6	...	6
Wales ...	154	62	216	AMERICA—			
Scotland ...	1,668	1,075	2,743	Barbados ...	1	1	2
Ireland ...	2,883	2,688	5,571	Canada ...	53	14	67
Isle of Man ...	7	7	14	Jamaica...	7	4	11
Other European				Newfoundland ...	6	2	8
Brit'h Possessions	22	14	36	Other American			
Austria-Hungary ...	46	3	49	Brit. Possessions	2	1	3
Belgium ...	8	...	8	Argentine Republic	1	1	2
Denmark ...	93	16	109	Brazil ...	2	1	3
France ...	72	20	92	Chili ...	2	...	2
Germany ...	624	290	914	Mexico ...	1	1	2
Greece ...	16	4	20	United States of			
Italy ...	80	4	84	America ...	90	21	111
Netherlands ...	15	2	17	Other American			
Norway ...	66	3	69	Countries ...	34	9	43
Portugal...	9	...	9	POLYNESIA—			
Russia ...	63	10	73	Fiji ...	5	2	7
Spain ...	13	3	16	Papua ...	7	...	7
Sweden ...	139	9	148	Other Polynesian			
Switzerland ...	53	14	67	Brit. Possessions	1	...	1
Other European				New Caledonia ...	5	...	5
Countries ...	6	1	7	New Hebrides ...	8	...	8
ASIA—				Samoa ...	2	...	2
British India ...	82	24	106	Other Polynesian			
Ceylon ...	9	3	12	Islands ...	...	2	2
Straits Settlements	9	1	10	South Sea Islands			
Other Asiatic British				(so described) ...	35	2	37
Possessions ...	6	...	6	At Sea ...	68	32	100
Afghanistan ...	3	...	3	Not stated...	791	196	987
Arabia ...	5	...	5	Total Deaths ...	30,285	21,892	52,177
China ...	395	5	400				
Japan ...	59	...	59				
Java ...	6	...	6				

13. **Occupations of Male Persons who Died in 1912.**—Information as to the occupations of the 30,285 males who died in the Commonwealth in 1912, is contained in the following statement :—

OCCUPATIONS OF DECEASED MALES, 1912.

COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
CLASS I.—PROFESSIONAL.			
General Government	103	Groceries and stimulants ...	163
Local Government	16	Living animals... ..	28
Defence	48	Leather, raw material	3
Law and order	185	Wool and tallow	13
Religion	81	Hay, corn, etc.	36
Charity	4	Other vegetable matter	14
Health	157	Wood and coal... ..	28
Literature	38	Stone, clay, glass	2
Science	13	Gold, silver, and precious stones ...	1
Civil and mechanical engineering, architecture and surveying ...	80	Ironmongery	27
Education	113	Merchants	98
Fine arts	39	Shopkeepers and assistants ...	169
Music	31	Dealers and hawkers	131
Amusements	98	Agents and brokers	128
		Clerks, bookkeepers, etc.	535
		Commercial travellers and salesmen	164
		Others engaged in commercial pur- suits	91
Total Professional	1,006	Speculators on chance events ...	11
		Storage	2
CLASS II.—DOMESTIC.		Total Commercial	2,350
Hotelkeepers and assistants ...	257	CLASS IV.—TRANSPORT AND COMMUNICATION.	
Others engaged in providing board and lodging... ..	64	Railway traffic	361
House servants	191	Tramway traffic	38
Coachmen and grooms	82	Road traffic	556
Hairdressers	74	Sea and river traffic	593
Laundrymen	12	Postal service	65
Others engaged in domestic occu- pations	109	Telegraph and telephone service ...	34
Total Domestic	789	Messengers, etc.	14
CLASS III.—COMMERCIAL.		Total Transport & Communication	1,661
Banking and finance	74	CLASS V.—INDUSTRIAL.	
Insurance and valuation	52	Books and publications	143
Land and household property ...	41	Musical instruments	13
Books, publications and advertising	42	Prints, pictures, and art materials	12
Musical instruments	1	Ornaments and small wares ...	14
Designs, medals, type	1	Designs, medals, type	9
Watches, clocks, jewellery ...	3	Watches and clocks	32
Machines, tools, and implements ...	4	Surgical instruments	1
Carriages and vehicles	4	Arms and ammunition	4
Building materials	1	Engines, machines, tools, etc. ...	102
Furniture	5	Carriages and vehicles	126
Chemicals	1	Harness, saddlery, and leatherware	77
Paper and stationery	12	Ships, boats, and equipment ...	62
Textile fabrics	97	Furniture	97
Dress	18	Building material	89
Fibrous materials	1	Chemicals and by-products ...	4
Animal food	276		
Vegetable food	73		

OCCUPATIONS OF DECEASED MALES, 1912—Continued.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
INDUSTRIAL—Continued.		CLASS VI.—AGRICULTURAL, PASTORAL, MINING PURSUITS, ETC.	
Textile fabrics	22	Agricultural	2,911
Dress	413	Pastoral	738
Fibrous materials	16	Dairy farming	85
Animal food	24	Bees, fisheries and wild animals	177
Vegetable food	198	Forestry	81
Groceries and stimulants	71	Water conservation and supply	15
Animal matter	65	Mines and quarries	1,862
Workers in wood not elsewhere classed	24		
Fodder	1	Total Primary Producers	5,869
Paper	1		
Stone, clay, glass	86	CLASS VII.—INDEFINITE.	
Jewellery and precious stones	32	Independent means, having no specific occupation	948
Metals, other than gold and silver	387	Occupation unspecified	640
Fuel, light, etc.	47		
Buildings—		Total Indefinite	1,588
Builders	95		
Stonemasons	98	CLASS VIII.—DEPENDENTS.	
Bricklayers	97	Dependent relatives (including persons under 20 years of age with no specified occupation)	8,415
Slaters	4	Supported by voluntary and State contributions	394
Carpenters	507		
Plasterers	46	Total Dependents	8,809
Painters and glaziers	195		
Plumbers	88	CLASS VIII.—DEPENDENTS.	
Signwriters	5	Dependent relatives (including persons under 20 years of age with no specified occupation)	8,415
Others	6	Supported by voluntary and State contributions	394
Roads, railways, and earthworks	59		
Disposal of the dead	9	Total Dependents	8,809
Disposal of refuse	18		
Other industrial workers—		Total Male Deaths	30,295
Manufacturers	21		
Engineers, firemen	383		
Contractors	172		
Labourers, undefined	4,206		
Others	32		
Total Industrial	8,213		

14. **Index of Mortality.**—The death rates, those for age-groups on pages 171 and 174 excepted, so far shewn are crude rates, *i.e.*, they simply shew the number of deaths per thousand of mean population, without taking the age constitution of that population into consideration. It is, however, a well-known fact that the death rate and age constitution of a people are intimately related, thus, other conditions being equal, the death rate of a country will be lower if it contain a large percentage of young people (not infants). In order to have a comparison of the mortality of various countries on a uniform basis, so far as age constitution is concerned, the International Statistical Institute in its 1895 session recommended the universal adoption of the population of Sweden in five age-groups, as ascertained at the Census of 1890, as the standard population by which this "Index of Mortality," as distinguished from the crude death rate, should be ascertained. The calculation for 1912 is shewn below for each of the States and Territories and for the Commonwealth, the distribution of the mean population of 1912 into age-groups being in accordance with the distribution as found at the Census of 1911:—

INDEX OF MORTALITY, 1912.—(STATES AND COMMONWEALTH).

Age-Group.	Mean Population, 1912, distributed according to Results of Census of 1911.	Number of Deaths, 1912.	No. of Deaths per 1000 of Mean Population, 1912, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality.
NEW SOUTH WALES.					
Under 1 year	47,757	3,687	77.20	25.5	1.97
1 year and under 20	683,907	2,472	3.61	398.0	1.44
20 years " 40	581,870	2,643	4.54	269.6	1.22
40 " " 60	314,155	3,579	11.39	192.3	2.19
60 " and upwards	109,049	6,481	59.43	114.6	6.81
Total	1,736,738	18,862	10.86	1,000.0	13.63
VICTORIA.					
Under 1 year	32,091	2,666	83.08	25.5	2.12
1 year and under 20	522,099	1,856	3.55	398.0	1.41
20 years " 40	429,351	1,987	4.63	269.6	1.25
40 " " 60	273,362	3,243	11.86	192.3	2.28
60 " and upwards	99,484	6,837	68.72	114.6	7.88
Total	1,356,387	16,589	12.23	1,000.0	14.94
QUEENSLAND.					
Under 1 year	17,078	1,348	78.93	25.5	2.01
1 year and under 20	258,730	911	3.52	398.0	1.40
20 years " 40	206,930	1,102	5.33	269.6	1.44
40 " " 60	112,195	1,470	13.10	192.3	2.52
60 " and upwards	36,644	2,090	57.04	114.6	6.54
Total	631,577	6,921	10.96	1,000.0	13.91
SOUTH AUSTRALIA.					
Under 1 year	10,858	745	68.61	25.5	1.75
1 year and under 20	165,109	430	2.60	398.0	1.03
20 years " 40	138,930	619	4.46	269.6	1.20
40 " " 60	77,083	766	9.94	192.3	1.91
60 " and upwards	29,664	1,776	59.91	114.6	6.87
Total	421,644	4,336	10.28	1,000.0	12.76
WESTERN AUSTRALIA.					
Under 1 year	8,058	726	90.10	25.5	2.30
1 year and under 20	110,393	421	3.81	398.0	1.52
20 years " 40	110,683	724	6.54	269.6	1.76
40 " " 60	60,200	780	12.96	192.3	2.49
60 " and upwards	12,092	684	56.57	114.6	6.48
Total	301,426	3,335	11.06	1,000.0	14.55
TASMANIA.					
Under 1 year	5,388	391	72.57	25.5	1.85
1 year and under 20	81,614	279	3.42	398.0	1.36
20 years " 40	58,630	280	4.78	269.6	1.29
40 " " 60	34,072	356	10.45	192.3	2.01
60 " and upwards	11,980	751	62.69	114.6	7.18
Total	191,684	2,057	10.73	1,000.0	13.69
NORTHERN TERRITORY.					
Under 1 year	30	4	133.33	25.5	3.40
1 year and under 20	618	1	1.62	398.0	0.64
20 years " 40	896	9	10.04	269.6	2.71
40 " " 60	1,510	38	25.17	192.3	4.84
60 " and upwards	305	15	49.18	114.6	5.64
Total	3,359	67	19.95	1,000.0	17.23
FEDERAL TERRITORY.					
Under 1 year	47	3	63.83	25.5	1.63
1 year and under 20	835	1	1.20	398.0	0.48
20 years " 40	626	1	1.60	269.6	0.43
40 " " 60	379	...	...	192.3	0.00
60 " and upwards	150	5	33.33	114.6	3.82
Total	2,037	10	4.91	1,000.0	6.36

INDEX OF MORTALITY, 1912.—(STATES AND COMMONWEALTH)—Continued.

Age-Group.	Mean Population, 1912, distributed according to Results of Census of 1911.	Number of Deaths, 1912.	No. of Deaths per 1000 of Mean Population, 1912, in each Age-Group.	Age Distribution per 1000 of Standard Population.	Index of Mortality
COMMONWEALTH.					
Under 1 year	121,307	9,570	78.89	25.5	2.01
1 year and under 20	1,823,305	6,371	3.49	398.0	1.39
20 years " 40	1,527,916	7,365	4.82	269.6	1.30
40 " " 60	872,956	10,232	11.72	192.3	2.25
60 " and upwards	299,368	18,639	62.26	114.6	7.13
Total	4,644,852	52,177	11.23	1,000.0	14.08

NOTE.—The small number of persons whose ages were not ascertained at the 1911 Census have been proportionately distributed among the various age-groups, and the same plan has been followed in regard to the 112 persons who died in 1912, and whose ages were not stated in the certificates of death.

It will be seen that Victoria has the highest index and crude rates, while South Australia has the lowest index and lowest crude rate. The range of the indexes is slightly larger than that of the crude death rates, thus, while the latter in 1912 rose from 10.28 per thousand in South Australia to 12.23 per thousand in Victoria, a range of 1.95 per thousand, the indexes varied from 12.76 per thousand in South Australia to 14.94 per thousand in Victoria, a range of 2.18 per thousand.

For purposes of comparison with previous years the index of mortality is shewn in the following table for each of the eleven years 1902-1912 :—

INDEX OF MORTALITY, 1902-1912 (STATES AND TERRITORIES).

Year.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Northern Territory.	Federal Territory.	Commonwealth.
1902	15.32	15.90	15.68	15.50	17.55	14.25	...	...	15.70
1903	14.89	15.38	15.72	13.99	16.11	14.73	...	...	15.21
1904	13.90	14.46	12.89	13.45	15.49	14.13	...	...	14.11
1905	13.23	14.80	13.72	13.49	14.17	12.95	...	...	13.94
1906	12.91	15.26	12.44	13.78	15.84	14.10	...	...	13.94
1907	13.66	14.55	13.52	13.12	14.94	14.10	...	...	13.97
1908	13.13	15.58	13.37	12.89	14.81	14.46	...	...	14.10
1909	12.61	14.11	12.57	12.27	13.91	12.32	...	...	13.15
1910	12.48	14.15	12.60	12.50	13.48	13.62	...	...	13.17
1911	13.23	14.23	13.57	12.18	13.47	12.97	(a) 17.91	(b) 6.53	13.55
1912	13.63	14.94	13.91	12.76	14.55	13.69	17.23	6.36	14.08

(a) Included in South Australia prior to 1911. (b) Part of New South Wales prior to 1911.

A comparison of the above figures with the crude death rates given on a previous page shews that while the crude rate was highest in Victoria nine times in 11 years and twice in Western Australia, the index was highest in Victoria six times and in Western Australia five times in the same period. South Australia had the lowest index six times, Queensland and Tasmania each twice, and New South Wales once. The high index in Victoria is due to the large proportion of persons over 60 years of age, and in Western Australia to the heavy mortality in the early period of life.

15. Monthly Variations in Death Rates.—(i.) *General Death Rates.* The annual death rates, corresponding to the number of deaths registered in each equalised month, have been calculated for the six years 1907-1912, and a series of diagrams shewing the results for each State and the Commonwealth as a whole appears on page 209 of this issue, distinguishing the rates for males, females, and persons. The curves shewing the male and female rate exhibit in each State a fairly parallel course, irregularities being, however, more strongly marked in the case of the m curve.

The minimum rates in New South Wales and Queensland fall within the autumn months, from March to May, while in Victoria, South Australia, Western Australia, and Tasmania they fall in the spring months, October and November. In no case is there, however, a very great difference between the rates in spring and in autumn, the figures for the Commonwealth being 10.19 per thousand in March, and 10.34 per thousand in October. The maximum rates in New South Wales, Victoria, and Tasmania are experienced in August, and in Queensland in September, with the rates for December and January as secondary maxima. In South Australia the maximum rate of 11.33 per thousand falls in January, the rate for August standing next with 10.80 per thousand. In Western Australia the maximum rate is found in May.

(ii.) *Infantile Death Rates.* A similar series of diagrams, shewing the monthly variations in the infantile death rates, appears on page 210. With the exception of Western Australia, where the maximum occurs in May, the minima are found in the summer months in every State. The rates gradually decrease from January to March, shewing in several States a slight increase in April, with a further diminution until July. In July and August the rates rise to some extent, to fall again until October or November. From that time a rapid rise takes place, until the maximum is reached in December or January. Tasmania, where the seasons are rather later than in the continental States, shews two distinct minima in May and November, with a summer maximum in February, and a fairly high rate in September. In Western Australia the rates are moderately high in December and January, and drop until March, to rise rapidly in April and May when the maximum is reached. From May to September there is a gradual decrease, with a quick rise from the latter month until December.

16. **Causes of Death.**—(i.) Information regarding the changes in the classification of causes of death will be found in previous editions of this Year Book (*e.g.*, Year Book No. 5, pages 222 and 223). The statement will suffice, therefore, that the classification adopted by the Commonwealth Bureau of Census and Statistics is that of the International Institute of Statistics, as amended by the Committee of Revision which met in 1909. The detailed classification groups causes of death under 189 different headings in fourteen categories, as follows:—

- | | |
|---|---|
| i. General Diseases. | viii. Diseases of the Skin and Cellular Tissue. |
| ii. Diseases of the Nervous System and Organs of Special Sense. | ix. Diseases of the Organs of Locomotion. |
| iii. Diseases of the Circulatory System. | x. Malformations. |
| iv. Diseases of the Respiratory System. | xi. Infancy. |
| v. Diseases of the Digestive System. | xii. Old Age. |
| vi. Diseases of the Genito-urinary System and Adnexa. | xiii. Violence. |
| vii. Puerperal Condition. | xiv. Ill-defined Diseases. |

(ii.) *Compilation of Vital Statistics for 1907 and Subsequent Years in Commonwealth Bureau.* The vital statistics of the Commonwealth from the year 1907 onward have been tabulated according to this classification in the Commonwealth Bureau, and the system is being employed in the majority of the State offices in the preparation of their monthly and quarterly bulletins of vital statistics.

(iii.) *Classification of Causes of Death, 1907 to 1912, according to Abridged International Classification.* An abridged classification, which enumerates thirty-eight diseases and groups of diseases according to the revised classification, is in use in many European and American States, while the Commonwealth Statistics have been compiled on the detailed classification of 189 headings. A table has been compiled shewing the causes of death according to the abridged classification, so that the results may be compared with those of countries which use the abridged index.

The compilations for the years 1907 to 1912 will be found in full in "Bulletins Nos. 8, 14, 20, 25, 29, and 30 of Population and Vital Statistics"; here it will suffice to give the abridged classification under thirty-eight headings for the year 1912:—

CAUSES OF DEATH—COMMONWEALTH, 1912.

(a) MALES.

Cause.	N.S.W.	Vic.	Q'land.	S.Aust.	W.Aus.	Tas.	Nor. Ter.	Fed Ter.	C'wlth.
1 Typhoid Fever ...	144	54	92	32	67	10	...	...	399
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	4	2	6	...	1	...	...	...	13
4 Small-pox ...	...	...	...	...	...	...	...	...	...
5 Measles ...	191	52	26	8	...	5	...	...	282
6 Scarlet Fever ...	5	2	3	4	3	2	...	...	19
7 Whooping Cough ...	51	64	14	1	2	...	...	...	132
8 Diphtheria and Croup ...	132	118	46	24	16	20	...	...	356
9 Influenza ...	70	76	20	14	10	15	...	...	205
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	1	...	...	...	...	...	...	...	1
12 Other Epidemic Diseases ...	27	20	46	6	14	4	1	...	118
13 Tuberculosis of the Lungs ...	636	548	232	165	159	46	8	...	1,794
14 Tuberculosis of the Men- inges ...	26	35	7	16	4	7	...	...	95
15 Other forms of Tubercu- losis ...	65	60	28	18	20	4	...	...	195
16 Cancer and other Malig- nant Tumours ...	709	572	221	173	105	62	2	1	1,845
17 Simple Meningitis ...	164	108	60	37	36	17	...	...	422
18 Congestion, Hemorrhage and Softening of Brain ...	431	367	144	113	59	32	...	...	1,146
19 Organic Diseases of the Heart ...	1,119	957	459	249	133	125	...	...	3,042
20 Acute Bronchitis ...	105	72	25	21	10	9	...	...	242
21 Chronic Bronchitis ...	206	250	55	43	23	22	...	...	599
22 Pneumonia ...	511	485	133	71	97	88	...	...	1,385
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	345	489	131	58	80	44	3	...	1,150
24 Diseases of the Stomach (Cancer excepted) ...	78	89	37	16	11	6	1	...	238
25 Diarrhoea & Enteritis (chil- dren under 2 years only) ...	753	422	273	118	184	44	...	...	1,794
26 Appendicitis and Typhlitis ...	77	69	32	13	12	12	...	...	215
27 Hernia, Intestinal Ob- structions ...	92	77	33	17	21	8	...	...	248
28 Cirrhosis of the Liver ...	113	80	48	11	23	7	1	1	284
29 Nephritis and Bright's Disease ...	446	517	185	113	55	31	4	1	1,352
30 Non-cancerous Tumours and other Diseases of Female Genital Organs ...	...	...	...	...	...	...	...	...	...
31 Puerperal Septicæmia (Puerperal Fever, Puer- peral Peritonitis, Puer- peral Phlebitis) ...	...	...	...	...	...	...	...	...	...
32 Other Puerperal Accidents of Pregnancy and Con- finement ...	...	...	...	...	...	...	...	...	...
33 Congenital Debility and Malformations ...	786	595	264	195	160	112	1	1	2,114
34 Senile Debility ...	886	769	255	224	105	118	5	...	2,362
35 Violence ...	860	543	463	193	412	7	6	...	2,559
36 Suicide ...	195	118	96	43	43	18	1	...	514
37 Other Diseases ...	1,740	1,398	830	359	276	161	13	...	4,777
38 Unspecified or Ill-defined Diseases ...	126	64	41	49	69	24	15	...	388
Total—Males ...	11,094	9,072	4,305	2,409	2,210	1,130	61	4	30,285

CAUSES OF DEATH—COMMONWEALTH, 1912.

(b) FEMALES.

Cause.	N.S.W.	Vic.	Q'land.	S. A.	W.A.	Tas.	N. T.	Fed. Ter.	C'with.
1 Typhoid Fever ...	85	41	49	7	32	6	...	...	220
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	...	...	3	...	...	1	...	...	4
4 Small-pox ...	...	...	...	...	...	...	...	...	...
5 Measles ...	161	36	26	6	1	7	...	...	237
6 Scarlet Fever ...	6	3	...	9	2	2	...	...	22
7 Whooping Cough...	50	86	23	...	8	2	...	...	169
8 Diphtheria and Croup	135	134	52	33	19	25	...	...	398
9 Influenza ...	51	76	27	7	8	12	...	...	181
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	...	4	...	...	...	...	...	...	4
12 Other Epidemic Diseases ...	38	23	19	7	17	2	...	...	106
13 Tuberculosis of the Lungs...	434	522	103	155	63	73	2	...	1,352
14 Tuberculosis of the Meninges	32	48	6	16	3	15	...	...	120
15 Other forms of Tuberculosis	42	50	18	8	6	8	...	...	132
16 Cancer and other Malignant Tumours ...	578	644	173	152	75	70	...	...	1,692
17 Simple Meningitis ...	117	99	36	27	26	22	...	...	327
18 Congestion, Hemorrhage, & Softening of the Brain ...	324	386	124	110	34	51	...	1	1,030
19 Organic Diseases of the Heart	727	873	248	220	74	82	...	1	2,225
20 Acute Bronchitis ...	95	68	24	14	8	9	...	...	218
21 Chronic Bronchitis ...	138	197	48	41	10	20	...	...	454
22 Pneumonia ...	223	283	83	53	49	31	...	...	722
23 Other Diseases of the Res- piratory System (Tuber- culosis excepted) ...	253	302	59	45	26	27	1	...	713
24 Diseases of the Stomach (Cancer excepted) ...	86	72	26	11	12	12	...	...	219
25 Diarrhœa and Enteritis children under 2 yrs only)	641	326	217	84	144	41	...	1	1,454
26 Appendicitis and Typhlitis...	51	38	12	14	8	9	...	...	132
27 Hernia, Intestinal Obstruc- tions... ..	72	72	26	22	16	7	...	...	215
28 Cirrhosis of the Liver ...	34	72	17	12	4	3	...	...	142
29 Nephritis & Bright's Disease	270	330	121	67	30	18	...	...	836
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	61	41	14	11	16	2	...	...	145
31 Puerperal Septicæmia (Puer- peral Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	106	66	27	18	9	5	...	...	231
32 Other Puerperal Accidents of Pregnancy & Confinement	173	95	72	30	28	15	...	...	413
33 Congenital Debility and Mal- formations ...	579	420	189	144	95	69	...	1	1,497
34 Senile Debility ...	574	676	134	219	45	112	1	1	1,762
35 Violence... ..	242	190	121	51	54	20	...	...	678
36 Suicide ...	66	27	10	6	6	2	...	...	117
37 Other Diseases ...	1,241	1,169	496	306	178	131	1	1	3,523
38 Unspecified or Ill-defined Diseases ...	83	48	13	22	19	16	1	...	202
Total—Females ...	7,768	7,517	2,616	1,927	1,125	927	6	6	21,892

CAUSES OF DEATH—COMMONWEALTH, 1912.

(c) TOTAL, MALES AND FEMALES.

Cause.	N.S.W.	Vic.	Qld.	S. A.	W.A.	Tas.	N. Ter.	Fed. Ter.	Commonwealth
1 Typhoid Fever ...	229	95	141	39	99	16	...	...	619
2 Typhus ...	...	...	...	...	...	...	...	...	...
3 Malaria ...	4	2	9	...	1	1	...	...	17
4 Small-pox ...	...	...	...	...	...	...	...	...	...
5 Measles ...	352	88	52	14	1	12	...	...	519
6 Scarlet Fever ...	11	5	3	13	5	4	...	...	41
7 Whooping Cough ...	101	150	37	1	10	2	...	...	301
8 Diphtheria and Croup ...	267	252	98	57	35	45	...	...	754
9 Influenza ...	121	152	47	21	18	27	...	...	386
10 Asiatic Cholera ...	...	...	...	...	...	...	...	...	...
11 Cholera Nostras ...	1	4	...	...	...	...	...	...	5
12 Other Epidemic Diseases ...	65	43	65	13	31	6	1	...	224
13 Tuberculosis of the Lungs ...	1,070	1,070	335	320	222	119	10	...	3,146
14 Tuberculosis of the Meninges ...	58	83	13	32	7	22	...	...	215
15 Other forms of Tuberculosis ...	107	110	46	26	26	12	...	...	327
16 Cancer and other Malignant Tumours ...	1,287	1,216	394	325	180	132	2	1	3,537
17 Simple Meningitis ...	281	207	96	64	62	39	...	...	749
18 Congestion, Hæmorrhage, & Softening of the Brain ...	755	753	268	223	93	33	...	1	2,176
19 Organic Diseases of Heart ...	1,846	1,830	707	469	207	207	...	1	5,267
20 Acute Bronchitis ...	200	140	49	35	18	18	...	...	460
21 Chronic Bronchitis ...	344	447	103	84	38	42	...	...	1,053
22 Pneumonia ...	734	768	216	124	146	119	...	...	2,107
23 Other Diseases of the Respiratory System (Phthisis excepted) ...	598	791	190	103	106	71	4	...	1,863
24 Diseases of the Stomach (Cancer excepted) ...	164	161	63	27	23	18	1	...	457
25 Diarrhoea and Enteritis (children under 2 yrs. only) ...	1,394	748	490	202	328	85	...	1	3,248
26 Appendicitis and Typhlitis ...	128	107	44	27	20	21	...	...	347
27 Hernia, Intestinal Obstructions ...	164	149	59	39	37	15	...	...	463
28 Cirrhosis of the Liver ...	147	152	65	23	27	10	1	1	426
29 Nephritis & Bright's Disease ...	716	847	306	180	85	49	4	1	2,188
30 Non-cancerous Tumours & other Diseases of the Female Genital Organs ...	61	41	14	11	16	2	...	...	145
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis) ...	106	66	27	18	9	5	...	...	231
32 Other Puerperal Accidents of Pregnancy and Confinement ...	173	95	72	30	28	15	...	...	413
33 Congenital Debility and Malformations ...	1,365	1,015	453	339	255	181	1	2	3,611
34 Senile Debility ...	1,460	1,445	389	443	150	230	6	1	4,124
35 Violence ...	1,102	733	584	249	466	97	6	...	3,237
36 Suicide ...	261	145	106	49	49	20	1	...	631
37 Other Diseases ...	2,981	2,567	1,326	665	454	292	14	1	8,300
38 Unspecified or Ill-defined Diseases ...	209	112	54	71	88	40	16	...	590
Total—Males and Females	18,862	16,589	6,921	4,336	3,335	2,057	67	10	52,177

(d) The classification for the years 1907 to 1911 is shewn for the Commonwealth in the following table, and for purposes of comparison the figures for the year 1912 have

been repeated from the preceding table. Male and female deaths for 1905, 1906, and 1907 are shewn separately on page 237 of the second issue, those for 1908 on pages 211 and 212 of the third issue, for 1909 on pages 200 and 201 of the fourth issue, for 1910 on pages 202 and 203 of the fifth issue, and for 1911 on pages 224 and 225 of the sixth issue of this Year Book; while the figures for 1912 are given on pages 182 and 183.

The figures for 1907, 1908, and 1909, which were compiled under thirty-five headings, have here been distributed among the corresponding headings of the revised classification.

CAUSES OF DEATH—COMMONWEALTH, 1907 to 1912.

MALES AND FEMALES.

Cause.	1907.	1908.	1909.	1910.	1911.	1912.
1 Typhoid Fever	564	736	661	648	488	619
2 Typhus	...	...	...	...	...	...
3 Malaria	42	52	59	55	19	17
4 Small-pox	...	...	1	4	1	...
5 Measles	147	125	31	124	206	519
6 Scarlet Fever	37	63	74	58	24	41
7 Whooping Cough	1,070	249	257	476	291	301
8 Diphtheria and Croup	403	421	435	555	696	754
9 Influenza... ..	902	588	326	324	447	386
10 Asiatic Cholera	...	...	...	...	...	...
11 Cholera Nostras	5	4	1	1	6	5
12 Other Epidemic Diseases	276	268	221	184	295	224
13 Tuberculosis of the Lungs	3,206	3,409	3,169	3,059	3,164	3,146
14 Tuberculosis of the Meninges	237	205	220	215	269	215
15 Other forms of Tuberculosis	415	352	332	343	303	327
16 Cancer and other Malignant Tumours	2,940	2,921	3,112	3,205	3,321	3,537
17 Simple Meningitis... ..	648	676	616	567	636	749
18 Congestion, Hæmorrhage, and Softening of the Brain	1,901	1,867	1,665	1,704	2,178	2,176
19 Organic Diseases of the Heart	3,801	4,066	3,940	4,378	4,896	5,267
20 Acute Bronchitis	514	412	422	420	515	460
21 Chronic Bronchitis	844	818	897	859	1,046	1,053
22 Pneumonia	1,788	1,871	1,752	1,612	1,869	2,107
23 Other Diseases of the Respiratory System (Tuberculosis excepted)	1,689	1,569	1,565	1,544	1,872	1,863
24 Diseases of the Stomach (Cancer excepted)	334	308	272	297	370	457
25 Diarrhoea and Enteritis (Children under two years only)	2,733	3,236	2,803	3,145	2,462	3,248
26 Appendicitis and Typhlitis	305	293	344	315	320	347
27 Hernia, Intestinal Obstructions	411	389	396	398	439	463
28 Cirrhosis of the Liver	325	362	331	368	385	426
29 Nephritis and Bright's Disease	1,760	1,864	1,799	1,771	1,951	2,188
30 Non-cancerous Tumours and other Diseases of the Female Genital Organs	128	159	130	149	120	145
31 Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)	179	202	201	218	209	231
32 Other Puerperal Accidents of Pregnancy and Confinement	435	404	376	373	406	413
33 Congenital Debility and Malformations	3,038	2,973	2,905	3,221	3,142	3,611
34 Senile Debility	3,136	3,466	3,194	3,353	3,849	4,124
35 Violence	2,679	2,922	2,664	2,738	3,018	3,237
36 Suicide	461	497	495	516	544	631
37 Other Diseases	6,677	7,417	7,419	7,795	7,652	8,300
38 Unspecified or Ill-defined Diseases	1,275	1,262	1,087	598	460	590
Total	45,805	46,426	44,172	45,590	47,869	52,177

17. Certification of Deaths.—Information was obtained in 1912 as to the persons by whom the 52,177 deaths which occurred in the Commonwealth were certified. The result of the enquiry shews that approximately 88.1 per cent. (in 1910, 88.1 per cent., and in 1911, 88.2 per cent.) were certified by medical practitioners, and 10.9 per cent. (in 1910, 11.1 per cent., and in 1911, 10.9 per cent.) by coroners after inquests, or magisterial enquiries, while in 1.0 per cent. (in 1910, 0.8 per cent., and in 1911, 0.9 per cent.) of the cases there was either no certificate given, or particulars were not forthcoming. The results are shewn in detail in Bulletin No. 30; a short summary will therefore suffice here:—

CERTIFICATION OF DEATHS, COMMONWEALTH, 1912.

Death Certified by—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wlth.
Medical practitioner	16,600	14,620	6,261	3,896	2,727	1,849	29	9	45,991
Coroner ...	2,229	1,965	428	431	390	195	38	1	5,677
Not certified or not stated ...	33	4	232	9	218	13	...	...	509
Total Deaths ...	18,862	16,589	6,921	4,336	3,335	2,057	67	10	52,177

Of the cases certified by coroners, violent deaths numbered 2836, ill-defined cause^s 289, organic heart disease 508, senile decay 456, congenital debility 189, diarrhœa and enteritis 91, Bright's disease 98, congestion and hæmorrhage of brain 120, tuberculosis of lungs 84, pneumonia 102, infantile convulsions 87, broncho-pneumonia 38, diseases of arteries, aneurisms, etc. 45, and acute and chronic alcoholism 47; a total of 4990 out of 5677.

Of uncertified causes of death, violent deaths numbered 249, senile debility 55, ill-defined causes 32, infantile convulsions 25, congenital debility 34, diarrhœa and enteritis 6, tuberculosis of the lungs 7, organic heart disease 20, and pneumonia 2; a total of 430 out of 509.

18. Deaths from Special Causes.—The table on p. 185 furnishes comparisons for the last six years only, and comparisons will, therefore, be restricted to that period.

(i.) *Typhoid Fever.* Deaths from typhoid fever were more numerous in 1908 than in 1907, numbering 736, against 564 in 1907. In 1909 the number fell to 661, in 1910, to 648, and to 488 in 1911. In 1912, 619 were due to typhoid fever, of which 229 occurred in New South Wales, 95 in Victoria, 141 in Queensland, 39 in South Australia, 99 in Western Australia, and 16 in Tasmania.

(ii.) *Typhus.* The death of one woman was registered in 1906 in Victoria as being due to typhus, but this registration may have been due to an error in the death certificate, and the death may possibly have been one of typhoid (enteric) fever. No deaths from typhus have been registered from 1907 to 1912.

(iii.) *Malaria.* Deaths from malarial diseases are practically confined to the tropical districts of Northern Queensland and Western Australia, and to the Northern Territory, 9 out of 17 deaths registered in 1912 having occurred in Queensland, and 1 in Western Australia.

(iv.) *Small-pox.* No deaths from small-pox occurred during the two years 1907 and 1908, but in 1909 one death was registered in Western Australia. In 1910 one death was registered in New South Wales, and three in Victoria, and in 1911, only one death occurred in New South Wales. No deaths were registered in 1912.

(v.) *Measles.* No serious epidemic of measles has occurred for several years; the deaths in 1908 were less numerous than in 1907, numbering 125, against 147. In 1909 the deaths numbered 31, while 124 were registered in 1910, and 206 in 1911. In 1912

New South Wales experienced a slight epidemic, and was responsible for 352 deaths out of 519 registered, Victoria contributing 88, Queensland 52, South Australia 14, Western Australia 1, and Tasmania 12.

(iv.) *Scarlet Fever*. 41 deaths were registered in 1912, distributed over all six States.

(vii.) *Whooping Cough*. A rather severe epidemic of whooping cough visited New South Wales in the early part of 1907, causing 592 deaths out of a total of 1070 registered in the Commonwealth. The deaths in 1908 fell to 249, with a slight increase to 257 in 1909, and a much greater increase to 476 in 1910. During 1911, however, only 291 deaths, and in 1912, 301 deaths were registered.

(viii.) *Diphtheria and Croup*. Deaths in 1907, 403; in 1908, 421; in 1909, 435; in 1910, 555; in 1911, 696, and in 1912, 754, of which 267 occurred in New South Wales, 252 in Victoria, 98 in Queensland, 57 in South Australia, 35 in Western Australia, and 45 in Tasmania.

(ix.) *Influenza*. This disease was rather more prevalent in 1907 than in the two previous years, the deaths numbering 902, against 428 and 539. The deaths in 1908 were 588; in 1909, 926; 324 in 1910; in 1911, 447; and in 1912, 386, of which 121 occurred in New South Wales, 152 in Victoria, 47 in Queensland, 21 in South Australia, 18 in Western Australia, and 27 in Tasmania.

(x.) *Asiatic Cholera*. No cases of Asiatic cholera have ever occurred in the Commonwealth.

(xi.) *Cholera Nostras*. Isolated cases only of choleric form diarrhoea occurred in each of the six years. Five deaths from this cause occurred during 1912.

(xii.) *Other Epidemic Diseases*. The number of deaths registered under this heading was 276 in 1907, 268 in 1908, 221 in 1909, 184 in 1910, 295 in 1911, and 224 in 1912. The list in 1912 includes the following diseases:—Dysentery 103, erysipelas 93, leprosy 11, of which 10 occurred in Queensland, plague 1, other epidemic diseases, 16. Prior to 1910 beri-beri was included in other epidemic diseases, but is now included in No. 37 of the revised classification. Of the 65 deaths from leprosy in the years 1907 to 1912, 50 occurred in Queensland. There were no deaths from plague in the Commonwealth during 1910 and 1911. In 1907, 48 deaths were registered; in 1908, 14 deaths; and in 1909, 18 deaths. The only death registered in 1912 occurred in the Northern Territory.

(xiii.) *Tuberculosis of the Lungs and Acute Miliary Tuberculosis*. The deaths in 1912 numbered 3146, viz., 1794 males and 1352 females. The figures for the years 1907 to 1911 were 3206, 3409, 3169, 3059, and 3164 respectively. Of the deaths in 1912, 1070 occurred in New South Wales, 1070 in Victoria, 335 in Queensland, 320 in South Australia, 222 in Western Australia, 119 in Tasmania, and 10 in Northern Territory. In accordance with the revised classification, deaths from tuberculosis of the larynx are now included with tuberculosis of the lungs, instead of in class 15 as in years prior to 1910. In the table on page 185, deaths from tuberculosis of the larynx have been included with tuberculosis of the lungs, so that the figures allow of correct comparison.

(xiiiia.) *Tuberculosis of the Respiratory System*. Of the various forms of tuberculosis prevalent in the Commonwealth, that which has probably attracted the most attention and has been the subject of the widest comment is phthisis, or tuberculosis of the lungs. The intimate relation, however, between tuberculosis of the lungs and that of other parts of the respiratory system renders it desirable that all forms of tuberculosis of the respiratory system should be brought under one head for various investigations concerning the age incidence and duration of this disease.

In the matter of the age incidence of death from tuberculosis of the respiratory system, diagrams were given in Year Books 2, 3, and 4, pp. 239, 217, and 206 respectively, shewing the frequency of deaths at successive ages in England and Wales during 1906 (Fig. 1), and in the Commonwealth during 1907 (Fig. 2). These were superseded by a fuller reference based on later results in Year Book No. 5, pp. 230, etc. The results given depended upon intercensal estimates of population, and these having now been

adjusted to agree with the Census of 3rd April, 1911, some slight amendments of the figures in previous issues were made in Year Book No. 5. The figures are not now repeated.

(xiv.) *Tuberculosis of the Meninges.* The number of deaths registered in 1907 was 237; in 1908, 205; in 1909, 220; in 1910, 215; in 1911, 269; and in 1912, 215.

(xv.) *Other Forms of Tuberculosis.* Deaths numbered in 1907, 415; in 1908, 352; in 1909, 332; in 1910, 343; in 1911, 303; and in 1912, 327. The deaths in 1912 include the following forms of tuberculosis:—Abdominal tuberculosis, 146; Pott's disease, 49; white swellings, 24; tuberculosis of other organs, 45; and disseminated tuberculosis, 63. Tuberculosis of the larynx (see paragraph xiii.)

(xvi.) *All Forms of Tuberculosis.* A complete tabulation of all the different tubercular diseases from which deaths occurred in 1912, will be found in Bulletin No. 30 of Population and Vital Statistics. Here it will suffice to show a few of the features of the tabulation mentioned. The total number of deaths due to tubercular diseases was 3688, viz., 2084 males and 1604 females. The following table shews the ages of these 3688 persons:—

AGES OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1912.

COMMONWEALTH.

Ages.	Male.	Female	Total.	Ages.	Male.	Female	Total.
Under 5 years ...	122	111	233	55 years and under 60	131	42	173
5 years and under 10	30	36	66	60 " " 65	90	35	125
10 " " 15	18	48	66	65 " " 70	55	33	88
15 " " 20	85	141	226	70 " " 75	42	23	65
20 " " 25	174	271	445	75 " " 80	13	6	19
25 " " 30	244	227	471	80 " " over ...	6	5	11
30 " " 35	223	178	401				
35 " " 40	229	156	385				
40 " " 45	196	116	312				
45 " " 50	235	108	343				
50 " " 55	191	68	259				
				Total Deaths ...	2,084	1,604	3,688

A tabulation has been made of the occupations of males dying from tubercular diseases during 1912. A summary is here given:—

OCCUPATION OF MALES WHO DIED FROM TUBERCULAR DISEASES, 1912.

COMMONWEALTH.

Occupation.	No. of Deaths	Occupation.	No. of Deaths
Professional class ...	106	Agricultural class ...	156
Domestic class ...	79	Pastoral class ...	50
Mercantile class ...	266	Working in mines and quarries ...	205
Engaged in transport and communication ...	138	Other primary producers ...	12
Manufacturing class ...	276	Independent means ...	21
Engaged in building and construction ...	99	Dependents ...	247
Other industrial workers ...	383	Occupation not stated ...	46
		Total male deaths ...	2,084

The length of residence in the Commonwealth of persons who died from tubercular diseases has been tabulated for the year 1912 for all the Commonwealth States, with the following results:—

LENGTH OF RESIDENCE IN COMMONWEALTH
OF PERSONS WHO DIED FROM TUBERCULAR DISEASES, 1912.

Length of Residence in Commonwealth.	Male.	Fem.	Total	Length of Residence in Commonwealth.	Male.	Fem.	Total.
Born in Commonwealth ...	1,329	1,333	2,662	Resident 10 yrs. & under 15	36	7	43
Resident under 1 year ...	44	24	68	" 15 " " 20	61	12	73
" 1 year ...	39	14	53	" 20 " over ...	383	144	527
" 2 years ...	23	9	32	Length of resid'ce not stated	110	34	144
" 3 " 	9	8	17				
" 4 " 	10	4	14				
" 5 " & under 10	40	15	55	Total Deaths ...	2,084	1,604	3,688

There would not appear, therefore, to be much ground for the statement sometimes heard that many persons arrive in Australia in the last stages of consumption.

In order to shew the prevalence of tuberculosis in the several States, the death rates from tubercular diseases are shown in the following table, together with the percentage which deaths from tuberculosis bear on the total number of deaths registered :—

DEATH RATES (a) FROM TUBERCULOSIS AND PERCENTAGE ON TOTAL DEATHS.
COMMONWEALTH, 1912.

State.	Death Rates (a) from Tuberculosis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.80	0.62	0.71	6.55	6.54	6.55
Victoria ...	0.95	0.91	0.93	7.09	8.25	7.61
Queensland ...	0.78	0.44	0.62	6.20	4.86	5.69
South Australia ...	0.97	0.86	0.92	8.68	9.29	8.95
Western Australia	1.06	0.56	0.85	8.28	6.40	7.65
Tasmania ...	0.58	1.03	0.80	5.04	10.36	7.44
North. Territory	2.90	3.39	2.98	13.12	33.33	14.93
Federal Territory	...	...	...	...	...	...
Commonwealth	0.86	0.72	0.79	6.88	7.33	7.07

(a) Number of deaths from tuberculosis per 1000 of mean population.

It may be of interest to state that while deaths from pulmonary tuberculosis in the Commonwealth were 0.68 per thousand in 1912, they were 0.93 per thousand in Ontario in 1911; 1.08 per thousand in England and Wales in 1911; 1.51 per thousand in Prussia in 1911; 2.94 per thousand in Austria in 1911; and 3.67 per thousand in Hungary in 1911. The Commonwealth occupies, therefore, a very enviable position in regard to tubercular diseases, when compared with European countries.

(xvi.) *Cancer and other Malignant Tumours.* Deaths from cancer shew a tendency to increase, the figures for 1907 being 2940 deaths; for 1908, 2921 deaths; for 1909, 3112 deaths; 1910, 3205 deaths; 1911, 3321 deaths; and 1912, 3537 deaths. Of the deaths registered in 1912, 1845 were those of males, viz., 709 in New South Wales, 572 in Victoria, 221 in Queensland, 173 in South Australia, 105 in Western Australia; 62 in Tasmania; 2 in the Northern Territory, and 1 in the Federal Territory; while 1692 were those of females; viz., 578 in New South Wales, 644 in Victoria, 173 in Queensland, 152 in South Australia, 75 in Western Australia, and 70 in Tasmania. Bulletin No. 30 contains a complete tabulation of the various types of cancer and of the seat of the disease, of which the following is a summary :—

DEATHS FROM CANCER, COMMONWEALTH, 1912.

Seat of Disease.						Male.	Female	Total.
Cancer, etc., of the buccal cavity	...	...	...	...	...	260	81	291
" " the stomach and liver	...	...	...	...	...	779	501	1,280
" " the peritoneum, the intestines, and the rectum	...	...	...	...	...	220	219	439
" " the female genital organs	...	...	...	...	...	...	362	362
" " the breast	...	...	...	...	...	...	276	276
" " the skin	...	...	...	...	...	81	41	122
" " other organs	...	...	...	...	...	505	262	767
Total Deaths						1,845	1,692	3,537

Of these deaths 1012 were described as cancer, 1551 as carcinoma, 145 as epithelioma, 452 as "malignant disease," 37 as "malignant tumour," 10 as neoplasm, 37 as "rodent ulcer," 275 as sarcoma, and 18 as scirrhus.

The ages of the 3537 persons who died from cancer in 1912, are shewn in the following table, from which it will be seen that while the ages below 35 are not by any means immune from the disease, the great majority of deaths occurred at ages from 35 upwards, the maximum being found in the age group 65 to 70.

AGES OF PERSONS WHO DIED FROM CANCER, 1912.
COMMONWEALTH.

Ages.	Males.	Female	Total.	Ages.	Males.	Female	Total.
Under 15 years	18	15	33	65 years and under 70	281	183	464
15 years and under 20	6	5	11	70 " " 75	223	196	419
20 " " 25	14	9	23	75 " " 80	174	157	331
25 " " 30	15	20	35	80 " " 85	92	60	152
30 " " 35	25	39	64	85 years and over	27	34	61
35 " " 40	39	70	109	Age not stated	3	1	4
40 " " 45	74	138	212				
45 " " 50	166	173	339				
50 " " 55	199	187	386	Total Deaths	1,845	1,692	3,537
55 " " 60	246	213	459				
60 " " 65	243	192	435				

A tabulation has been made of the occupations of the males who died from cancer, of which the following is a summary:—

OCCUPATION OF MALES WHO DIED FROM CANCER, 1912.
COMMONWEALTH.

Occupation.	No. of Deaths.	Occupation.	No. of Deaths.
Professional class	77	Pastoral class	72
Domestic class	63	Working in mines and quarries	136
Mercantile class	206	Other primary producers	13
Engaged in transport and communication	124	Independent means	67
Manufacturing class	201	Dependents	61
Engaged in building and construction	113	Occupation not stated	53
Other industrial workers	373		
Agricultural class	286	Total Male Deaths	1,845

As the following tables shew, the total death rates from cancer are below those for tubercular diseases in all the States with the exception of New South Wales, while both rates were equal in Queensland. The male death rate from cancer was, in 1912, in excess of that from tuberculosis in Tasmania, and the female death rates in New South Wales, Victoria, Queensland, and Western Australia. While the death rates from tuberculosis have a general tendency to decrease, the death rates from cancer have, on the contrary, shewn an increase in nearly every recent year. Thus for the whole Commonwealth in 1907 the death rate from tuberculosis was 0.22 per thousand greater than that from cancer, and in 1908 the excess amounted to 0.25 per thousand. In 1909 this decreased to 0.14; in 1910 to 0.10; in 1911 to 0.09; and in 1912 to 0.03 per thousand.

DEATH RATES (a) FROM CANCER AND PERCENTAGE ON TOTAL DEATHS, 1912.

COMMONWEALTH.

State.	Death Rates (a) from Cancer.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.78	0.70	0.74	6.39	7.44	6.82
Victoria ...	0.84	0.95	0.90	6.31	8.57	7.33
Queensland ...	0.64	0.60	0.62	5.13	6.61	5.69
South Australia ...	0.81	0.73	0.77	7.18	7.89	7.50
Western Australia	0.61	0.58	0.60	4.75	6.67	5.40
Tasmania ...	0.63	0.75	0.69	5.49	7.55	6.42
Northern Territ'y	0.72	...	0.60	3.28	...	2.99
Federal Territory	0.90	...	0.49	25.00	...	10.00
Commonwealth	0.76	0.76	0.76	6.09	7.73	6.78

(a) Number of deaths from Cancer per 1000 of mean population.

The following table shows the death rate of the Commonwealth in comparison with other countries:—

CANCER—DEATH RATE IN VARIOUS COUNTRIES.

Country.	Year.	Rate.	Country.	Year.	Rate.
Hungary ...	1911	0.46	New Zealand ...	1912	0.78
Spain ...	1911	0.51	France ...	1910	0.79
Denmark ...	1911	0.57	Prussia ...	1911	0.81
Western Australia	1912	0.60	Austria ...	1911	0.82
Queensland ...	1912	0.62	Ireland ...	1911	0.82
Belgium ...	1910	0.63	German Empire	1911	0.88
Canada (Ontario)	1911	0.63	Victoria ...	1912	0.90
Italy ...	1911	0.65	Norway ...	1910	0.93
Tasmania ...	1912	0.69	United Kingdom	1910	0.96
New South Wales	1912	0.74	England and Wales	1911	0.99
United States (Registra-			Scotland ...	1910	1.03
tion Area ...	1911	0.74	Netherlands	1911	1.07
Commonwealth	1912	0.76	Switzerland ...	1910	1.23
South Australia	1912	0.77			

The fifth issue of this Year Book contains, on pages 230, etc., a paper dealing, *inter alia*, with the incidence of cancer in the Commonwealth. The paper is not reprinted in the present issue.

(xvii.) *Simple Meningitis*. The table shews 648 deaths in 1907, 676 deaths in 1908, 616 deaths in 1909, 567 in 1910, 636 in 1911, and 749 in 1912.

(xviii.) *Apoplexy, Hæmorrhage, and Softening of the Brain*. The deaths registered under this heading in 1907 were 1901, viz., 1038 males and 863 females; in 1908, 1867, viz., 991 males and 876 females; in 1909, 1665, viz., 869 males and 796 females; in 1910, 1704, viz., 864 males and 840 females; in 1911, 2178, viz., 1122 males and 1056 females, and in 1912, 2176, viz., 1146 males and 1030 females. The 1912 figures are made up of hæmorrhage of the brain and apoplexy—1086 males, 968 females, total 2054; and softening of the brain—60 males, 62 females, total 122.

(xix.) *Organic Diseases of the Heart*. The number of deaths registered in 1912 was 5267, viz., 3042 males and 2225 females. Of these deaths, New South Wales was responsible for 1119 males and 727 females; Victoria for 957 males and 873 females; Queensland for 459 males and 248 females; South Australia for 249 males and 220 females; Western Australia for 133 males and 74 females; Tasmania for 125 males and 82 females; and the Federal Territory 1 female. To the figures for 1912 correspond the following death rates and percentages to total deaths:—

DEATH RATES (a) FROM ORGANIC HEART DISEASE AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1912.

State.	Death Rates (a) from Organic Heart Disease.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	1.23	0.88	1.06	10.09	9.36	9.79
Victoria ...	1.41	1.29	1.35	10.55	11.61	11.03
Queensland ...	1.34	0.86	1.12	10.66	9.48	10.21
South Australia ...	1.16	1.06	1.11	10.34	11.42	10.82
Western Australia	0.77	0.57	0.69	6.02	6.58	6.21
Tasmania ...	1.27	0.88	1.08	11.06	8.85	10.06
Northern Territory	...	...	...	...	...	...
Federal Territory	...	1.08	0.49	...	16.67	10.00
Commonwealth ...	1.26	1.00	1.13	10.05	10.16	10.10

(a) Number of deaths from Organic Heart Disease per 1000 of mean population.

(xx.) *Acute Bronchitis*. The classification of causes of deaths requires deaths of persons under five years of age, which are merely ascribed to "bronchitis," to be classified under "acute bronchitis," and similarly certified deaths of older persons under "chronic bronchitis." This rule has been followed throughout in compiling the tables for 1907-1912, with the result that acute bronchitis is credited with 514 deaths in 1907, 412 deaths in 1908, 422 deaths in 1909, 420 deaths in 1910, 515 deaths in 1911, and 460 deaths in 1912, viz., 242 males and 218 females.

(xxi.) *Chronic Bronchitis*. The adjustment mentioned in the preceding paragraph gives a total of 844 deaths in 1907, 818 deaths in 1908, 897 deaths in 1909, 859 in 1910, 1046 in 1911, and 1053 in 1912, viz., 599 males and 454 females.

(xxii.) *Pneumonia*. The 1912 figures were 1385 males and 722 females, a total of 2107 deaths.

(xxiii.) *Other Diseases of the Respiratory System.* This head was established in 1910, the figures previously being included in "Other Diseases" (paragraph xxxvii.). Deaths in 1907 numbered 1689; in 1908, 1569; in 1909, 1565; in 1910, 1544; in 1911, 1872; and in 1912, 1863. The total for 1912 is made up as follows, viz.:—Diseases of the nasal fossæ, 2 deaths; diseases of the larynx, 81 deaths; diseases of the thyroid body, 14 deaths; broncho-pneumonia, 989 deaths; pleurisy, 164 deaths; pulmonary congestion and apoplexy, 211 deaths; gangrene of the lung, 28 deaths; asthma, 146 deaths; pulmonary emphysema, 9 deaths; fibroid phthisis, miners' complaint, 135 deaths; other diseases of the respiratory system (tuberculosis excepted), 84 deaths.

(xxiv.) *Diseases of the Stomach (Cancer excepted).* In 1912 this heading includes: Ulcer of the stomach, 71 males, 54 females; and other diseases of the stomach (cancer excepted), 167 males, 165 females; a total of 457 deaths. The corresponding figures for the years 1907 to 1911 were 334, 308, 272, 297, and 370 respectively.

(xxv.) *Diarrhœa and Enteritis (Children under two years only).* In 1907, deaths numbered 2733, viz., 1513 boys and 1220 girls; in 1908, 3236, viz., 1814 boys and 1422 girls; in 1909, 2803, viz., 1544 boys and 1259 girls; in 1910, 3145, viz., 1713 boys and 1432 girls; in 1911, 2462, viz., 1388 boys and 1074 girls, and in 1912, 3248, viz., 1794 boys and 1454 girls. The 1912 deaths were distributed amongst the six States as follows:—New South Wales, 753 males, 641 females, total 1394; Victoria, 422 males, 326 females, total 748; Queensland, 273 males, 217 females, total 490; South Australia, 118 males, 84 females, total 202; Western Australia, 184 males, 144 females, total 328; Tasmania, 44 males, 41 females, total 85; and Federal Territory, 1 female.

The following are the death rates and percentages on total deaths due to infantile diarrhœa and enteritis in the States and Territories for the year 1912:—

DEATH RATES (a) FROM INFANTILE DIARRHŒA AND ENTERITIS, AND PERCENTAGE ON TOTAL DEATHS, COMMONWEALTH, 1912.

State.	Death Rate (a) from Infantile Diarrhœa and Enteritis.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.83	0.78	0.80	6.79	8.25	7.39
Victoria ...	0.62	0.48	0.55	4.65	4.34	4.51
Queensland ...	0.80	0.75	0.78	6.34	8.29	7.08
South Australia...	0.55	0.41	0.48	4.90	4.36	4.66
Western Australia	1.06	1.11	1.09	8.33	12.80	9.83
Tasmania ...	0.45	0.44	0.44	3.89	4.42	4.13
Northern Territory	...	...	...	...	...	...
Federal Territory	...	1.08	0.49	...	16.67	10.00
Commonwealth	0.74	0.65	0.70	5.92	6.64	6.23

(a) Number of deaths from these diseases per 1000 of mean population.

As a large number of these deaths is directly due to improper feeding, it would be interesting to know the percentage of infants who were bottle-fed, but, unfortunately, no provision exists for the registration of this information. The number of deaths was larger than usual in 1908, particularly in Victoria, and to a lesser degree in South Australia and in Tasmania, owing to the phenomenal heat experienced in the early part of that year. The death rates for the three States named were 0.83, 0.61, and 0.71 per 1000 respectively in 1908, compared with 0.55, 0.45 and 0.48 in 1907, and with 0.50, 0.36 and 0.51 in 1911. The rate in 1912 was higher in every State, Tasmania excepted, than that for 1911, the increase being particularly noticeable in New South Wales, Queensland, and Western Australia, where the 1911 rate had been 0.57, 0.58, and 0.87 respectively, compared with 0.80, 0.78, and 1.09 for 1912, as shewn in the preceding table.

(xxvi.) *Appendicitis and Typhlitis*. Prior to 1910 deaths from these causes were included in Other Diseases, paragraph xxxvii. Deaths numbered 305 in 1907, 293 in 1908, 344 in 1909, 315 in 1910, 320 in 1911, and in 1912, 347, viz., 215 males and 132 females.

(xxvii.) *Hernia, Intestinal Obstructions*. The number of deaths has not varied much from year to year, the number registered in 1907 being 411; in 1908, 389; in 1909, 396; in 1910, 398; in 1911, 439; and in 1912, 463, viz., 248 males and 215 females.

(xxviii.) *Cirrhosis of the Liver*. The deaths in 1907 numbered 325; in 1908, 362; in 1909, 331; in 1910, 368; in 1911, 385; and in 1912, 426, viz., 284 males and 142 females.

(xxix.) *Nephritis and Bright's Disease*. The number of deaths attributable to these diseases from year to year is a very large one. In 1907 there were registered the deaths of 1065 males and 695 females; in 1908, those of 1140 males and 724 females; in 1909 those of 1076 males and 723 females; in 1910, 1771, 1077 males and 694 females; in 1911, 1951, 1197 males and 754 females; and in 1912, 2188, 1352 males and 836 females. Of the deaths registered in 1912, those of 66 males and 69 females were ascribed to acute nephritis, and those of 1286 males and 767 females to Bright's disease. New South Wales was responsible for 716 deaths; Victoria for 847; Queensland for 306; South Australia for 180; Western Australia for 85; Tasmania for 49; the Northern Territory for 4, and the Federal Territory for 1; making a total of 2188.

(xxx.) *Non-cancerous Tumours and other Diseases of the Female Genital Organs*. Deaths in 1907 numbered 128; in 1908, 159; in 1909, 130; in 1910, 149; in 1911, 120; and in 1912, 145. Included in the 145 deaths registered in 1912 were the following:—Non-puerperal uterine hæmorrhage, 4; non-cancerous uterine tumours, 32; other diseases of the uterus, 32; cysts and other ovarian tumours, 29; other diseases of the female genital organs, 48.

(xxxi.) *Puerperal Septicæmia (Puerperal Fever, Puerperal Peritonitis, Puerperal Phlebitis)*. Deaths in 1907 were 179; in 1908, 202; in 1909, 201; in 1910, 218; in 1911, 209, and in 1912, 231.

(xxxii.) *Other Puerperal Accidents of Pregnancy and Confinement*. The deaths in 1907 numbered 435; in 1908, 404; in 1909, 376; in 1910, 373; in 1911, 406; and in 1912, 413. Included in the 413 deaths registered in 1912 were the following:—Accidents of pregnancy, 92; puerperal hæmorrhage, 75; other accidents of childbirth, 83; puerperal albuminuria and convulsions, 120; puerperal phlegmasia alba dolens, embolus, sudden death, 35; death following childbirth, 8.

(xxxiii.) *All Puerperal Diseases*. The 644 deaths registered in 1912 under the two preceding headings will be found tabulated in "Bulletin No. 30; Commonwealth Demography" under various aspects. It will suffice to repeat here the following facts:—

Of the 644 mothers who died in childbirth during the year 1912, 579 were married and 65 were single. As the total number of nuptial confinements was 124,427, and of ex-nuptial confinements 7299, it follows that one in 215 of married mothers, and one in 112 of single mothers, died of puerperal disease, the general proportion being one in 205, as against one in 197 in 1911, one in 196 in 1910, one in 195 in 1909, one in 181 in 1908, and one in 178 in 1907.

The ages of the mothers who died varied from 15 to 47 years, and are shewn in the following table:—

AGES OF MOTHERS WHO DIED IN CHILDBIRTH, COMMONWEALTH, 1912.

Age at Death.	Married Women.	Single Women.	Total.	Age at Death.	Married Women.	Single Women.	Total.
15 years ...	...	3	3	32 years ...	30	1	31
16 " ...	1	2	3	33 " ...	22	...	22
17 " ...	3	3	6	34 " ...	18	1	19
18 " ...	6	4	10	35 " ...	20	...	20
19 " ...	8	9	17	36 " ...	35	...	35
20 " ...	12	4	16	37 " ...	32	1	33
21 " ...	12	5	17	38 " ...	25	1	26
22 " ...	14	3	17	39 " ...	17	1	18
23 " ...	31	6	37	40 " ...	14	1	15
24 " ...	21	3	24	41 " ...	11	1	12
25 " ...	24	4	28	42 " ...	7	2	9
26 " ...	35	1	36	43 " ...	10	...	10
27 " ...	22	1	23	44 " ...	9	...	9
28 " ...	37	2	39	45 " ...	6	...	6
29 " ...	25	3	28	47 " ...	1	...	1
30 " ...	36	1	37				
31 " ...	35	2	37	Total deaths	579	65	644

Of the 579 married women shewn in the above table, 17 died in Tasmania; in regard to these no information is available as to previous issue and as to duration of marriage. Of the remaining 562 women, 197 died at their first confinement, 84 at their second, 73 at their third, 59 at their fourth, 52 at their fifth, 32 at their sixth, 27 at their seventh, 15 at their eighth, 8 at their ninth, 6 at their tenth, 6 at their eleventh, 2 at their twelfth, and 1 at her thirteenth. The total number of children of the 562 mothers was 1578.

Forty-three of the mothers who died had been married less than one year, 85 between one and two years, 52 between two and three years, the duration of marriage ranging up to 26 years. This tabulation will be found in detail, and distinguishing the ages at marriage, in "Bulletin No. 30; Commonwealth Demography," as will a further tabulation shewing the duration of marriage and previous issue in combination. These tables shew, for instance, that one mother, who had been married at the age of 24 years, died at the age of 43, in the 19th year of her marriage, at her thirteenth confinement.

(xxxiii.) *Congenital Debility and Malformations.* The total deaths registered under these heads in 1912 were 3611, of whom 3577 were children under 1 year of age, inclusive of 3135 under three months. The figures include:—Malformations, 279 males, 175 females, total 454; and congenital debility, icterus, and sclerema of children under one year of age, 1835 males and 1322 females, total 3157; or a grand total of 3611. Of these deaths, 1365 were registered in New South Wales, viz., 786 males and 579 females; 1015 in Victoria, viz., 595, males and 420 females; 453 in Queensland, viz., 264 males and 189 females; 339 in South Australia, viz., 195 males and 144 females; 255 in Western Australia, viz., 160 males and 95 females; 181 in Tasmania, viz., 112 males and 69 females; 1 male in the Northern Territory, and 1 male and 1 female in the Federal Territory.

(xxxiv.) *Senile Debility.* The deaths ascribed to "old age" form a large group, and are slightly in excess of those due to infantile debility. In 1907 they numbered 3136, viz., 1721 males and 1415 females; in 1908, 3466, viz., 2027 males and 1439 females; in 1909, 3194, viz., 1829 males and 1365 females; in 1910, 3353, viz., 1905 males and 1448 females; in 1911, 3849, viz., 2225 males and 1624 females, and in 1912, 4124, viz., 2362 males and 1762 females. Of the deaths registered in 1912, 1460 occurred in New South Wales, viz., 886 males and 574 females; 1445 in Victoria, viz., 769 males and 676 females; 389 in Queensland, viz., 255 males and 134 females; 443 in South Australia, viz., 224 males and 219 females; 150 in Western Australia, viz., 105 males and 45 females; 230 in Tasmania, viz., 118 males and 112 females; 5 males and 1 female in the Northern Territory and 1 female in the Federal Territory.

Of the males whose death was described as due to senility, 6 were aged between 55 and 59; 59 between 60 and 64; 169 between 65 and 69; 348 between 70 and 74; 609 between 75 and 79; 625 between 80 and 84; 359 between 85 and 89; 136 between 90 and 94; 45 between 95 and 99; while 4 were 100 years old and upwards; and of two the age was not stated.

Of the females, 1 was between 55 and 59; 35 were between 60 and 64; 107 between 65 and 69; 237 between 70 and 74; 404 between 75 and 79; 494 between 80 and 84; 308 between 85 and 89; 131 between 90 and 94; 36 between 95 and 99; while 7 were 100 years old and upwards; and of two the age was not stated.

(xxxv.) *Violence.* A very large number of deaths is every year due to external violence, and, as might be expected from the fact that their occupations expose them much more to accidents, males largely predominate. The figures quoted are exclusive of suicides, which have been treated as a separate group. Deaths ascribed to violence numbered in 1907, 2679, viz., 2038 males and 641 females; in 1908, 2922, viz., 2187 males and 735 females; in 1909, 2664, viz., 2050 males and 614 females; in 1910, 2738, viz., 2128 males and 610 females; in 1911, 3018, viz., 2323 males and 695 females; and in 1912, 3237, viz., 2559 males and 678 females. Of the deaths registered in 1912, those of 860 males and 242 females occurred in New South Wales; those of 543 males and 190 females in Victoria; those of 463 males and 121 females in Queensland; those of 198 males and 51 females in South Australia; those of 412 males and 54 females in Western Australia; those of 77 males and 20 females in Tasmania; and those of 6 males in the Northern Territory.

The following table shews the various kinds of accidental deaths which occurred in 1912, distinguishing males and females:—

DEATHS FROM VIOLENCE, COMMONWEALTH, 1912.

Cause of Death.	Males.	Females.	Total.
Poisoning by food	24	7	31
Venomous bites and stings	10	6	16
Other acute poisonings	36	20	56
Conflagration	8	1	9
Burns (conflagration excepted)	114	207	321
Absorption of deleterious gases	53	41	94
Accidental drowning	643	89	732
Traumatism by firearms	112	9	121
Traumatism by cutting or piercing instruments	3	2	5
Traumatism by fall	325	58	383
Traumatism in mines or quarries	155	...	155
Traumatism by machines	24	...	24
Traumatism by other crushing (vehicles, railways, etc.)	509	58	567
Injuries by animals	74	6	80
Starvation, thirst, fatigue	46	5	51
Excessive cold	5	...	5
Effects of heat	81	46	127
Lightning	8	2	10
Electricity (lightning excepted)	8	...	8
Homicide by firearms	14	3	17
Homicide by cutting or piercing instruments... ..	11	8	19
Homicide by other means	35	30	65
Fractures (cause not specified)	116	57	173
Other external violence	145	23	168
Total Deaths	2,559	678	3,237

In every kind of violent death there was, therefore, an excess of males, with the exception of burning accidents, in which female deaths largely predominated.

The excessive heat of January, 1908, was responsible for an increase in the number of deaths caused by insolation, i.e., sunstroke and heat apoplexy, from 64 in 1907 to 246 in 1908, distributed as follows:—New South Wales, 46; Victoria, 130; Queensland, 14; South Australia, 39; Western Australia, 15; Tasmania, 2. In 1911 the deaths fell to 78, while in 1912 they numbered 127.

(xxxvi.) *Suicide.* It may be said that suicides have shewn a tendency to decrease during recent years, the number in 1905 having been 520, viz., 431 males and 89 females; while in 1906 it was 499, viz., 403 males and 96 females; in 1907, 461, viz., 385 males and 76 females; in 1908, 497, viz., 413 males and 84 females; in 1909, 495, viz., 398 males and 97 females; in 1910, 516, viz., 432 males and 84 females; in 1911, 544, viz., 446 males and 98 females, and in 1912, 631, viz., 514 males and 117 females. Of the suicides in 1912, a number considerably in excess of the number in previous years, those of 195 males and 66 females, happened in New South Wales; those of 118 males and 27 females in Victoria; those of 96 males and 10 females in Queensland; those of 43 males and 6 females in South Australia; those of 43 males and 6 females in Western Australia; those of 18 males and 2 females in Tasmania, and that of 1 male in Northern Territory.

The modes adopted by persons who committed suicide in the years 1907 to 1912 were as follows:—

NUMBER OF MALE AND FEMALE SUICIDES, COMMONWEALTH, 1907 to 1912.

Mode of Death.	Males.		Females.		Total.	
	Total of 5 years 1907-11.	1912.	Total of 5 years 1907-11.	1912.	Total of 5 years 1907-11.	1912.
Poisoning	387	128	207	70	594	198
Asphyxia	7	4	1	...	8	4
Hanging or Strangulation	347	79	56	12	403	91
Drowning	177	34	84	11	261	45
Firearms	680	168	31	10	711	178
Cutting instruments	333	76	38	8	371	84
Precipitation from a height	22	...	5	...	27	...
Crushing... ..	28	8	5	1	33	9
Other modes	93	17	12	5	105	22
Total	2,074	514	439	117	2,513	631

The death rates from suicides and the percentage on total deaths borne by suicides are shewn in the following table:—

DEATH RATES (a) FROM SUICIDE AND PERCENTAGE ON TOTAL DEATHS, 1912. COMMONWEALTH.

State.	Death Rates (a) from Suicide.			Percentage on Total Deaths.		
	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	0.21	0.08	0.15	1.76	0.85	1.38
Victoria	0.17	0.04	0.11	1.31	0.36	0.87
Queensland	0.28	0.03	0.17	2.23	0.38	1.53
South Australia ...	0.20	0.03	0.12	1.79	0.31	1.13
Western Australia	0.25	0.05	0.16	1.95	0.53	1.47
Tasmania	0.18	0.03	0.11	1.59	0.32	1.02
Northern Territory	0.36	...	0.30	1.64	...	1.49
Federal Territory	...	...	...	...	...	...
Commonwealth	0.21	0.05	0.14	1.70	0.54	1.21

(a) Number of deaths from suicide per 1000 of mean population.

From the following table, which shows the ages of the persons who committed suicide in 1912, it will be seen that both extreme youth and extreme old age are represented:—

AGES OF PERSONS WHO COMMITTED SUICIDE, COMMONWEALTH, 1912.

Ages.	M.	F.	Total.	Ages.	M.	F.	Total.
10 years and under 15	4	3	7	60 years and under 65	20	4	24
15 " " 20	12	14	26	65 " " 70	23	3	26
20 " " 25	37	17	54	70 " " 75	10	...	10
25 " " 30	44	12	56	75 " " 80	7	...	7
30 " " 35	56	11	67	80 " " 85	1	...	1
35 " " 40	61	15	76	85 " " 90	1	...	1
40 " " 45	65	11	76	Age not stated	3	1	4
45 " " 50	61	10	71				
50 " " 55	62	12	74				
55 " " 60	47	4	51	Total Deaths	514	117	631

The following table shows the occupations of the 514 males who committed suicide:—

OCCUPATIONS OF MALE PERSONS WHO COMMITTED SUICIDE, 1912. COMMONWEALTH.

Occupations.	Deaths.	Occupations.	Deaths.
Professional class ...	29	Pastoral class ...	25
Domestic class ...	30	Working in mines and quarries ...	27
Mercantile class ...	89	Other primary producers ...	5
Engaged in transport and communication ...	24	Independent means ...	9
Manufacturing class ...	55	Dependents ...	8
Engaged in building and construction ...	29	Occupation not stated ...	15
Indefinite industrial workers ...	110		
Agricultural class ...	59	Total Deaths ...	514

The assertion has been made that suicide has become more frequent during recent years, but an examination of the figures from the year 1871 onwards hardly bears this out. The absolute figures have certainly increased, but proportionately to the population the figures for 1906-10 were practically the same as those for 1886-90 and 1891-95. The figures for the two years 1911-12, which have been added to the table, shew, however, a regrettable increase, not only absolutely, but also in proportion to the population. No particulars are available for Western Australia prior to 1886, and from 1886 to 1895 the sexes are not distinguished. All figures for the first five periods are, therefore, exclusive of Western Australia:—

SUICIDES, COMMONWEALTH, 1871-75 to 1911-12.

Period.	Number of Suicides.			Suicides per One Million.			Suicides of Females to 100 Suicides of Males. Based on	
	Males.	Females.	Total.	Males.	Females.	Total.	Absolute Figures.	Rates.
1871-75	715	150	865	150.94	37.56	99.07	20.98	24.88
1876-80	878	145	1,023	159.69	31.06	100.62	16.51	19.45
1881-85	999	183	1,182	152.58	32.90	97.61	18.32	21.56
1886-90	1,394	292	1,686	179.20	43.97	116.92	20.95	24.54
1891-95	1,574	337	1,911	181.84	44.09	117.07	21.41	24.31
1896-1900	1,838	410	2,248	191.11	47.88	123.65	22.31	25.05
1901-05	2,054	380	2,434	201.78	40.88	124.98	18.50	20.26
1906-10	2,031	437	2,468	186.11	43.22	117.39	21.51	23.22
1911-12	960	215	1,175	201.94	49.07	128.62	22.40	24.30

a. 1705 inclusive of Western Australian figures. b. 1984 inclusive of Western Australian figures.
c. 116.49 inclusive of Western Australian figures. d. 119.11 inclusive of Western Australian figures.

In the fifth issue of this Year Book (pp. 240, etc.), the result of a series of investigations into periodicity of suicide was published. The paper was partly reprinted in the sixth issue (pp. 241, etc.), but is not repeated in the present issue.

(xxxvii.) *Other Diseases.* The number of causes included under this heading is a very large one, amounting to no less than 79 of the items shewn in the detailed classification, and deaths were recorded under every one of these with the exception of the following six:—Glanders, anthrax, rabies, pellagra, intestinal parasites, and amputation. The total number of deaths under "other diseases" in 1907 was 6677, viz., 3933 males and 2744 females; in 1908, 7417, viz., 4351 males and 3066 females; in 1909, 7419, viz., 4344 males and 3075 females; in 1910, 7794, viz., 4590 males and 3204 females; in 1911, 7652, viz., 4508 males, 3144 females, and in 1912, 8300, viz., 4777 males and 3523 females. Following the revised edition of the classification the following changes have been made in this heading during 1910: beri-beri is now included under this heading instead of under xii., "Other Epidemic Diseases." Other diseases of the respiratory system (1863 deaths) are now shewn under a new head (xxiii.), and appendicitis and typhilitis (347 deaths) under head xxvi. Some of the diseases included here account for very considerable numbers of deaths. Thus there were 804 deaths ascribed to diarrhoea and enteritis of children over two years of age and of adults, 473 to convulsions of children under five years of age; 437 to diabetes; 370 to paralysis without indicated cause; and 470 to diseases of the arteries, atheroma, and aneurism. Particulars of the deaths included in 1912 are shewn in the following table:—

CAUSES OF DEATH INCLUDED UNDER "OTHER DISEASES," COMMONWEALTH, 1912

Causes.	M.	F.	T'tal.	Causes.	M.	F.	T'tal.
Purulent Infection and Septicæmia	81	77	158	Diseases of the Lymphatic System	13	7	20
Tetanus	86	34	120	Hæmorrhages, Other Diseases of Circulatory System	15	15	30
Mycoses	2	1	3	Diseases of the Mouth and its Associated Organs	4	9	13
Beri-beri	66	2	68	Diseases of the Pharynx	30	19	49
Rickets	7	5	12	Diseases of the Oesophagus	13	6	19
Syphilis	111	73	184	Diarrhoea and Enteritis of Children over two years of age and Adults	407	397	804
Gonococcus Infection	4	...	4	Ankylostomiasis	2	1	3
Other Tumours (Tumours of the female genital organs excepted)	13	24	37	Other Diseases of the Intestine's Acute Yellow Atrophy of the Liver	35	40	75
Acute Articular Rheumatism	96	121	217	Hydatid Tumours of the Liver	23	25	48
Chronic Rheumatism and Gout	38	52	90	Biliary Calculi	25	51	76
Scurvy	3	2	5	Other Diseases of the Liver	93	104	197
Diabetes	180	277	457	Diseases of the Spleen	6	7	13
Exophthalmic Goitre	9	55	64	Simple Peritonitis (non-puerperal)	75	87	162
Addison's Disease	15	14	29	Other Diseases of the Digestive System	22	13	35
Leucæmia	46	24	70	Chyluria	1	...	1
Anæmia, Chlorosis	136	134	270	Other Diseases of the Kidneys and their Adnexa	75	37	112
Other General Diseases	63	55	118	Calculi of Urinary Passages	16	9	25
Acute and Chronic Alcoholism	150	36	186	Diseases of the Bladder	155	30	185
Chronic Lead Poisoning	6	...	6	Other Diseases of the Urethra, Urinary Abscess, etc.	18	2	20
Other Chronic Poisonings due to occupations	2	...	2	Diseases of the Prostate	179	...	179
Other Chronic Poisonings	4	1	5	Non-venereal Diseases of the Male Genital Organs	1	...	1
Encephalitis	32	29	61	Non-puerperal Diseases of the Breast (Cancer excepted)	...	3	3
Progressive Locomotor Ataxia	71	14	85	Gangrene	80	60	140
Other Diseases of the Spinal Cord	132	77	209	Purpura	11	6	17
Paralysis without indicated cause	214	156	370	Acute Abscess	44	30	74
General Paralysis	115	23	138	Other Diseases of the Skin and Adnexa	19	23	42
Other Forms of Mental Alienation	31	39	70	Non-tuberculous Diseases of the Bones	29	12	41
Epilepsy	101	66	167	Other Diseases of the Joints (Tuberculosis & Rheumatism excepted)	5	1	6
Convulsions (non-puerperal)	10	18	28	Other Diseases of the Organs of Locomotion	...	1	1
Convulsions of children under five years of age	258	215	473	Other Diseases peculiar to Infancy	339	237	576
Chorea	2	1	3	Want of Care (Infants)	3	5	8
Neuralgia and Neuritis	21	28	49				
Other Diseases of the Nervous System	117	74	191				
Diseases of the Eye	1	...	1				
Diseases of the Ear	18	13	31				
Pericarditis	54	45	99				
Acute Endocarditis	148	134	282				
Angina Pectoris	76	35	111				
Diseases of the Arteries, Atheroma, Aneurism	348	122	470				
Embolism and Thrombosis	162	198	360				
Diseases of the Veins (Varices, Varicose Ulcers, Hæmorrhoids)	8	16	24				
				Total Deaths	4,777	3,523	8,300

(xxxviii.) *Unspecified or Ill-defined Diseases.* The number of cases which has to be included here is a considerable one from year to year, having numbered 1275 in 1907, 1262 in 1908, 1087 in 1909, 598 in 1910, 460 in 1911, and 590, viz., 388 males and 202 females in 1912. The detailed classification distinguishes these ill-defined diseases under three headings:—Ill-defined organic diseases, including such definitions as dropsy, anasarca, ascites, general oedema, etc.; sudden death, including syncope; and unspecified or ill-defined causes, of which the following are specimens:—Asthenia, coma, dentition, exhaustion, heart failure, etc. In 1912 the number of cases of death which would have to be classed under the first of these categories was 26; those belonging to the second, 29; and those belonging to the third, 535. It is, of course, true that there must always occur some cases where the disease is not well characterised, or where sufficient information is not procurable to allow of a clear definition being given in the certificate of death, but in the majority of cases included under this heading a more complete diagnosis and consequently a more satisfactory certificate would no doubt have been possible.

In the fifth issue of this Year Book, pp. 234, etc., some observations were published, dealing with the incidence of scarlet fever, measles, whooping cough, diphtheria and croup, typhoid, diarrhoea, enteritis, and dysentery. It has not been judged expedient to reprint the paper in the present issue.

19. Causes of Death in Classes.—The figures presented in the preceding paragraphs relate to certain definite causes of death. It is almost generally acknowledged that figures of this kind are of greater value in medical statistics than is a classification under general headings. The classification under fourteen general headings adopted by the compiler of The International Nomenclature is, however, shewn in the following table, together with the death rates and percentages on total deaths pertaining to those classes:

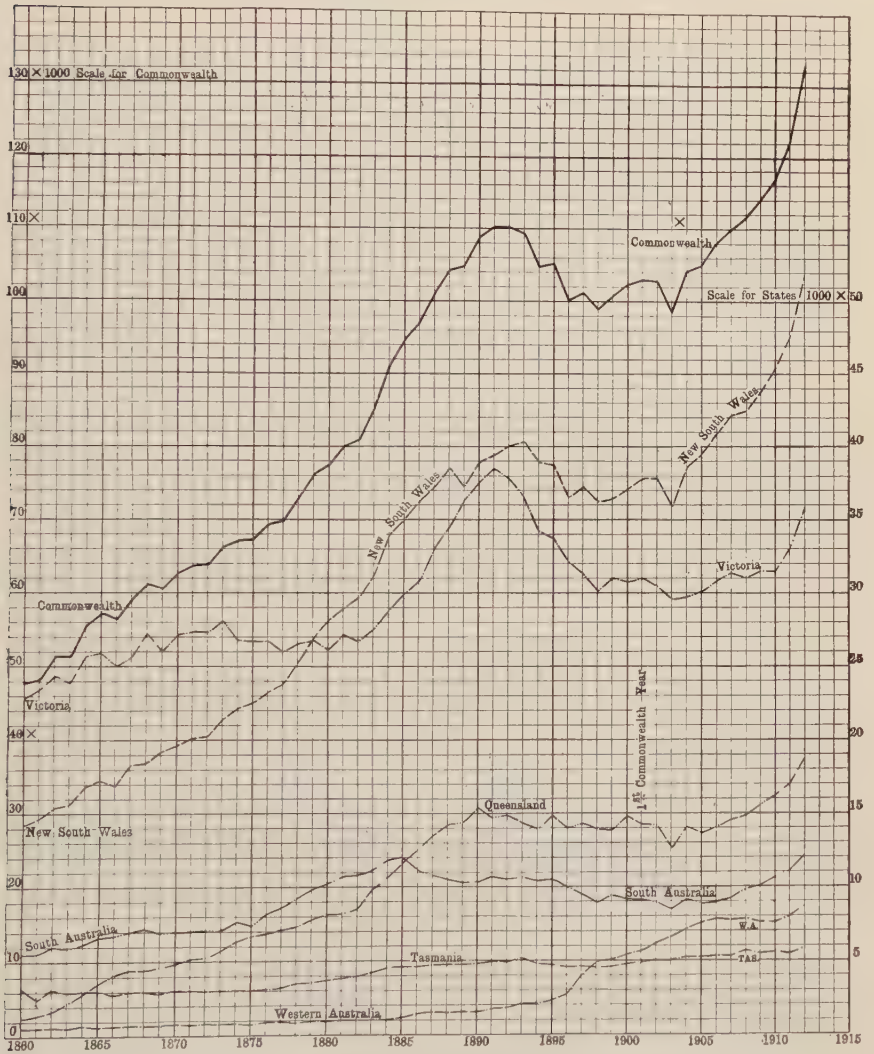
DEATHS, DEATH RATES (a), AND PERCENTAGES ON TOTAL DEATHS IN CLASSES, 1912.—COMMONWEALTH.

Class.	Total Deaths.			Death Rate. (a)			Percentage on Total Deaths.		
	M.	F.	Total.	M.	F.	Total	M.	F.	Total.
1. General diseases	6,572	5,604	12,176	2.72	2.52	2.62	21.70	25.60	23.34
2. Diseases of the Nervous System & of the Organs of Special Sense...	2,691	2,113	4,804	1.11	0.95	1.03	8.89	9.65	9.20
3. Diseases of the Circulatory System	3,866	2,801	6,667	1.60	1.26	1.43	12.76	12.80	12.78
4. Diseases of the Respiratory System	3,376	2,107	5,483	1.39	0.91	1.18	11.15	9.62	10.51
5. Diseases of the Digestive Organs...	3,516	2,930	6,446	1.45	1.32	1.39	11.61	13.38	12.36
6. Diseases of the Genito-Urinary System and Adnexa	1,797	1,062	2,859	0.74	0.48	0.62	5.93	4.85	5.46
7. Puerperal Condition	...	644	644	...	0.29	0.13	...	2.94	1.23
8. Diseases of the Skin and of the Cellular Tissue	154	119	273	0.06	0.05	0.06	0.51	0.54	0.52
9. Diseases of the Organs of Locomotion	34	14	48	0.01	0.01	0.01	0.11	0.07	0.09
10. Malformations	279	175	454	0.12	0.08	0.10	0.92	0.80	0.87
11. Infancy	2,177	1,564	3,741	0.90	0.70	0.81	7.19	7.15	7.17
12. Old Age	2,362	1,762	4,124	0.93	0.79	0.89	7.80	8.05	7.90
13. Violence	3,073	795	3,868	1.27	0.36	0.83	10.15	3.63	7.42
14. Ill-defined Diseases	388	202	590	0.16	0.09	0.13	1.28	0.92	1.13
Total	30,285	21,892	52,177	12.51	9.84	11.23	100.00	100.00	100.00

(a) Number of deaths per 1000 of mean population.

20. Deaths of Children under 1 Year.—"Bulletin No. 30: Commonwealth Demography" contains tables shewing the age at death of children dying during the first year of life from twenty causes. In the Bulletin mentioned the particulars are published for males and females separately for the States, Territories and Commonwealth, but the totals for the Commonwealth only are here shewn for both sexes combined:—

GRAPHS SHEWING TOTAL ANNUAL BIRTHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1912.



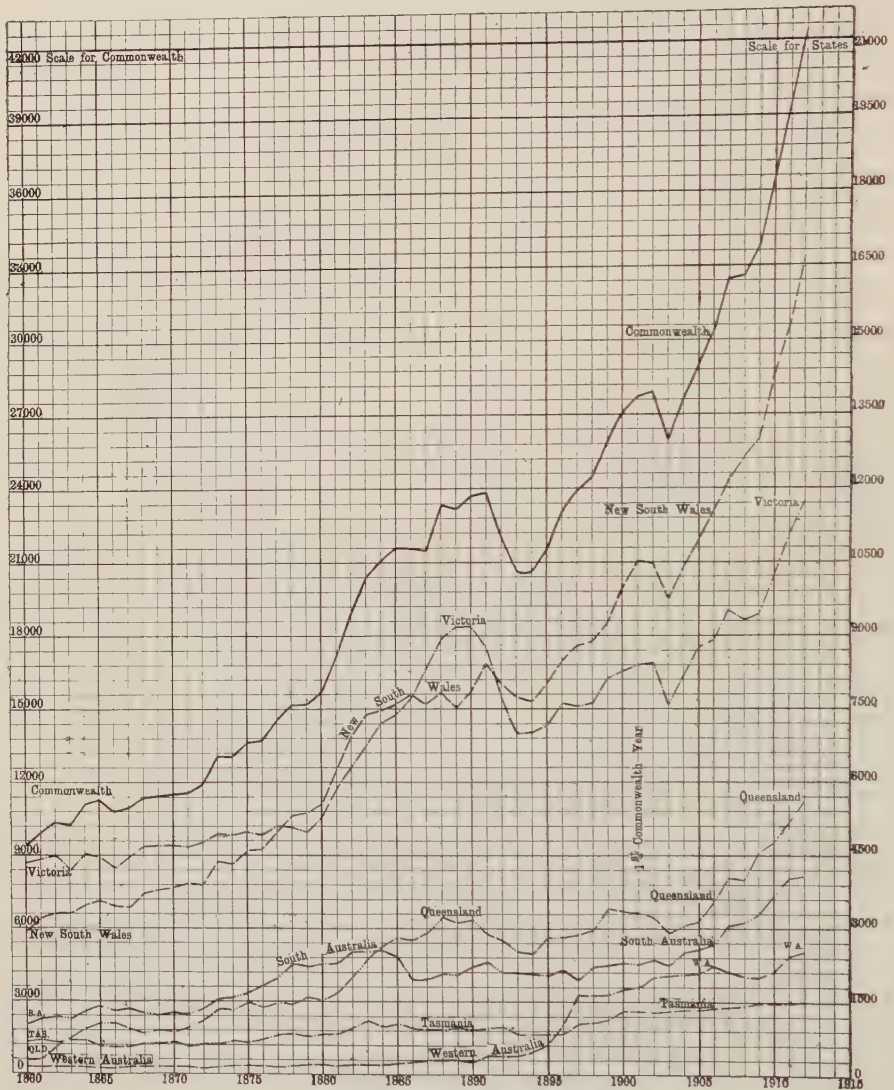
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth, and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right to the States.

The distances upwards from the common zero lines of the States and Commonwealth, marked 0, denote the total annual number of births in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the characters of the lines used are as follows:—Commonwealth, —————; New South Wales, - - - - -; Victoria, - - - - -; Queensland, - - - - -; South Australia, - - - - -; Western Australia, - - - - -; Tasmania, - - - - -.

GRAPHS SHEWING TOTAL ANNUAL MARRIAGES IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1912.



(See Table page 159.)

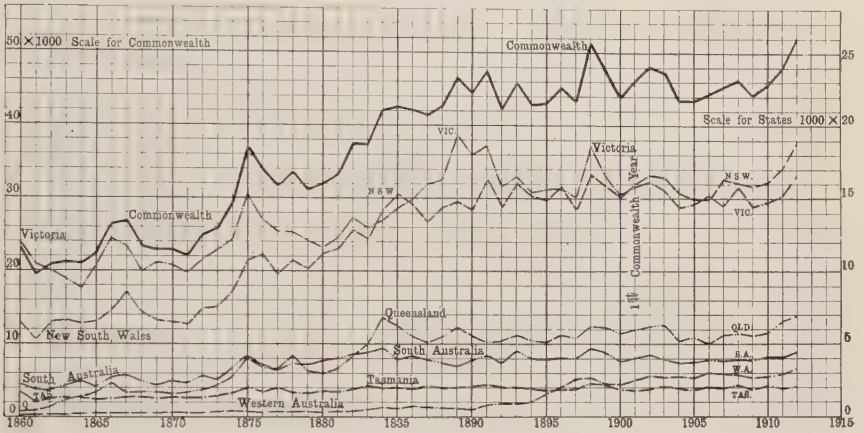
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 600 marriages for the Commonwealth and 300 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the zero line, marked 0, denote the total annual number of marriages in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the graphs refer are written thereon, and the lines used are similar to those for births on page 201.

GRAPHS SHEWING TOTAL ANNUAL DEATHS IN THE COMMONWEALTH AND STATES OF AUSTRALIA, 1860-1912.



(See Table page 168.)

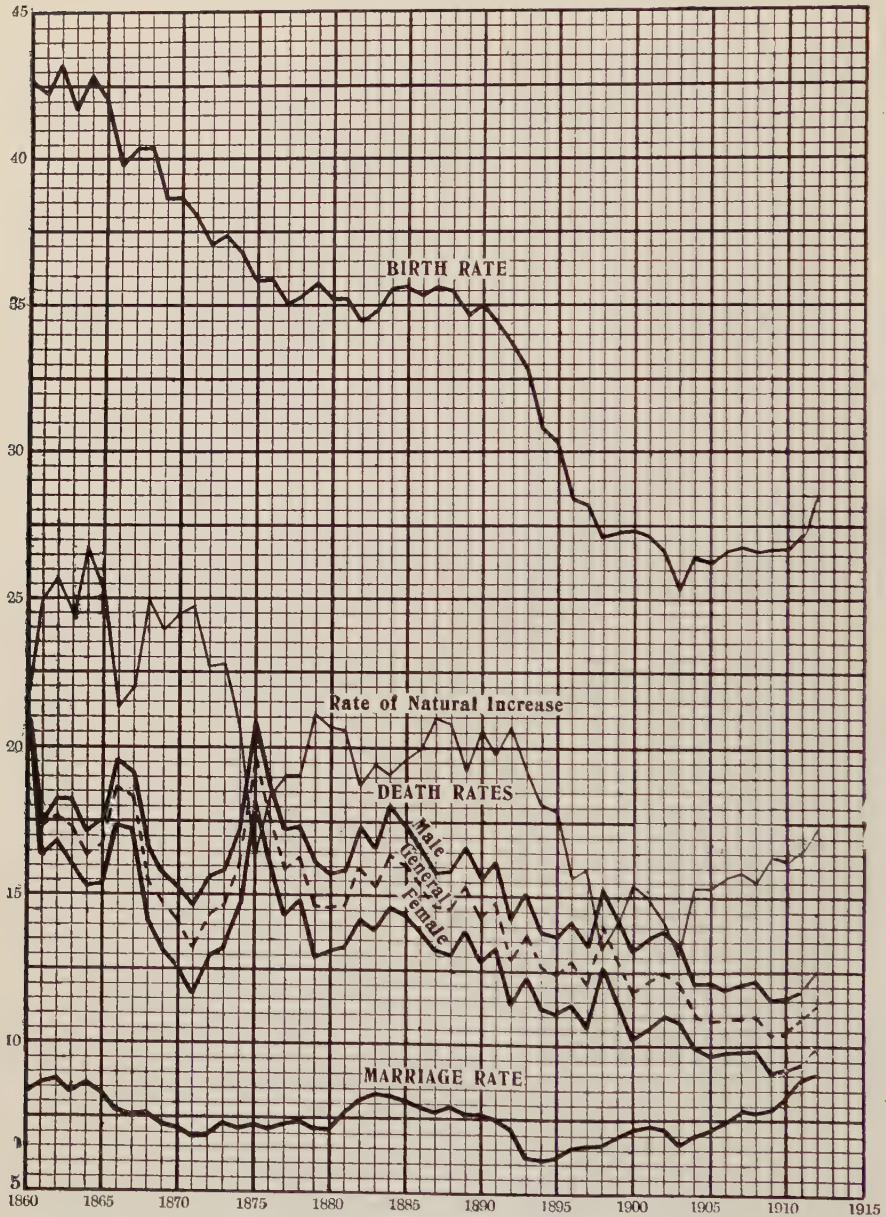
EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year for both Commonwealth and States, and the vertical height represents 2000 persons for the Commonwealth and 1000 for the States.

The scale on the left relates to the Commonwealth, and that on the right relates to the States.

The distances upwards from the common zero line for States and Commonwealth, marked 0, denote the total annual number of deaths in the States and Commonwealth, the scale of the latter being reduced one-half.

The names of the States to which the curves refer are written thereon, and the lines used are similar to those for births on page 201.

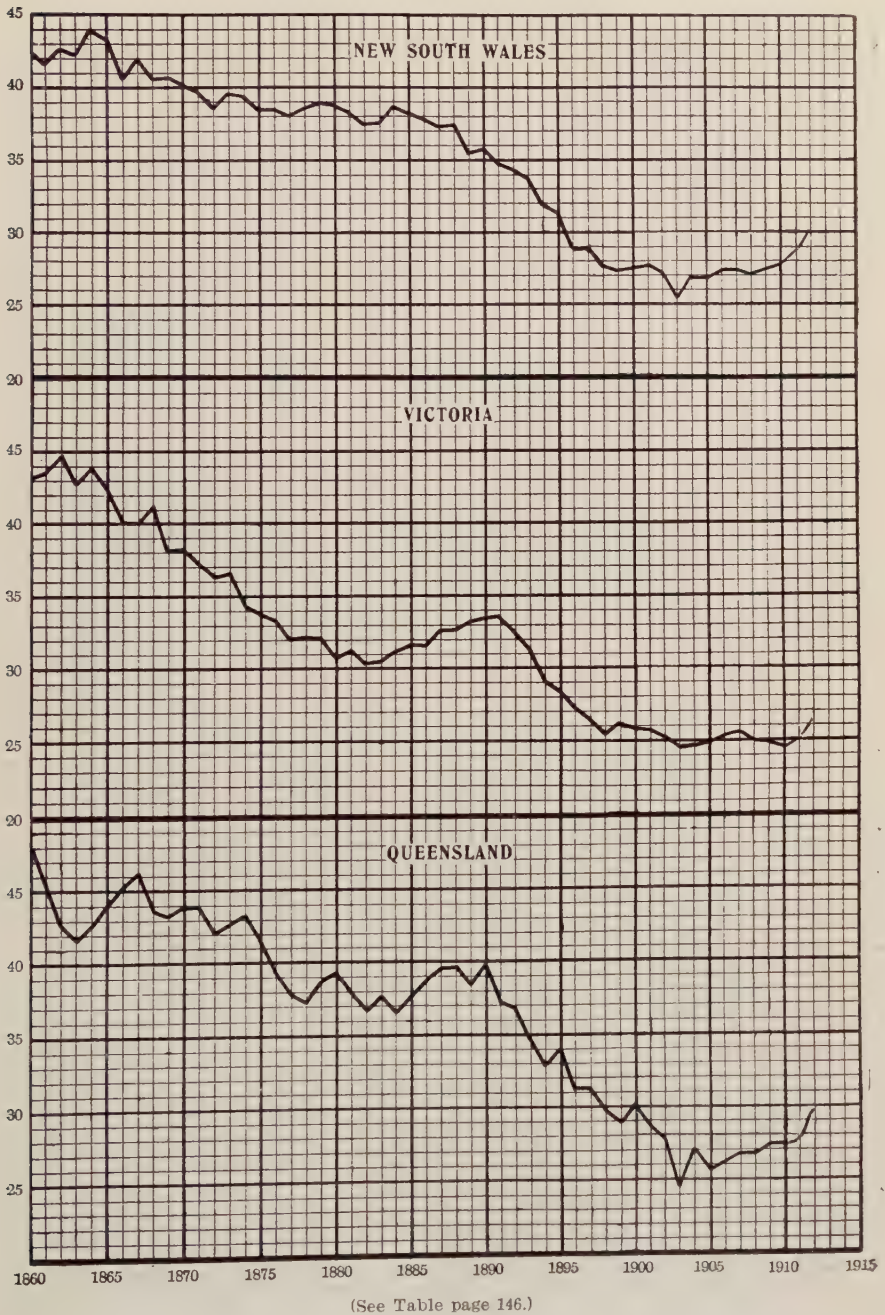
GRAPHS SHEWING GENERAL BIRTH, NATURAL INCREASE, DEATH (MALE, GENERAL AND FEMALE), AND MARRIAGE RATES IN THE COMMONWEALTH OF AUSTRALIA, 1860-1912.



(See pages 146, 159, 168 and 218.)

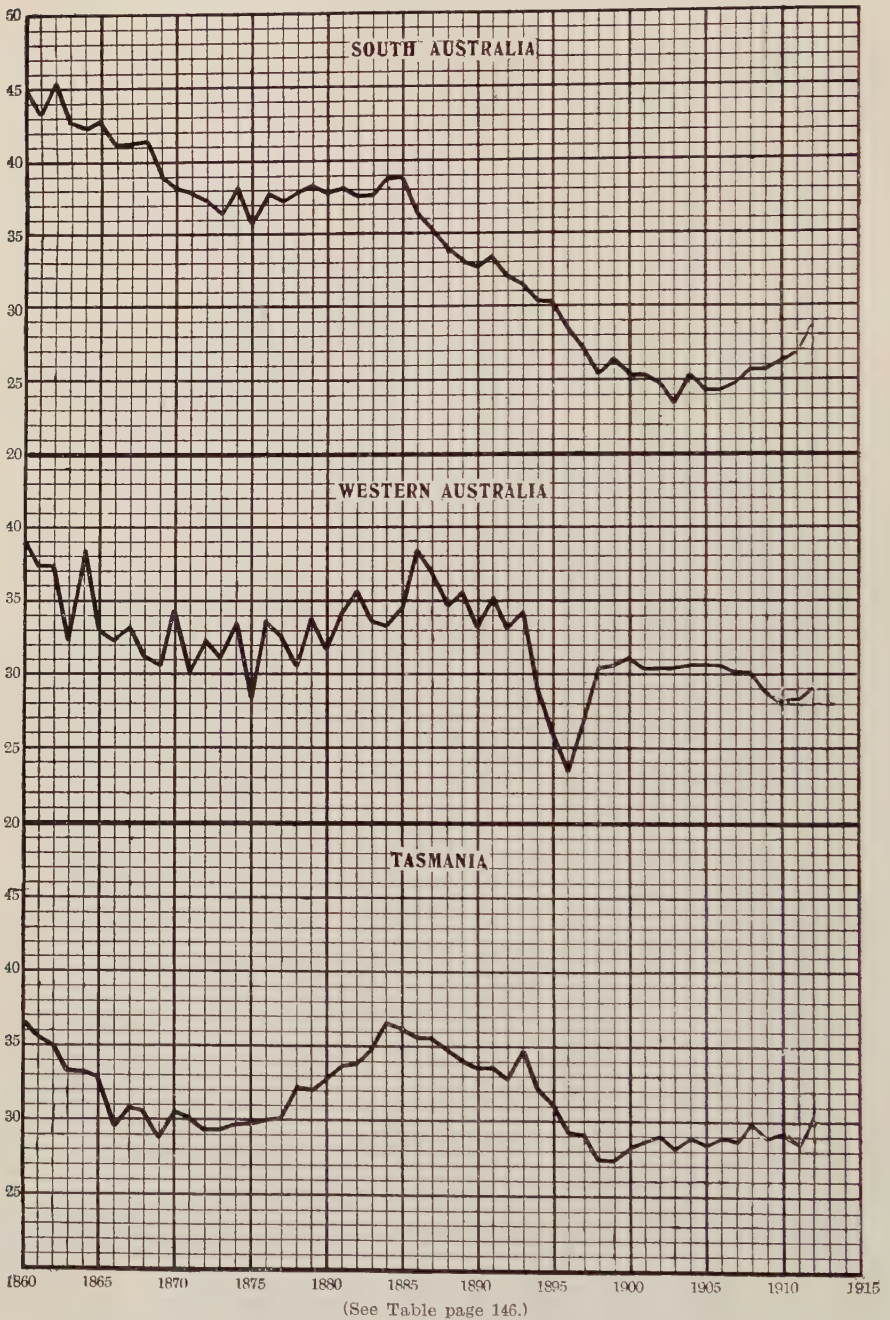
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height, according to the character of the curve, one half per thousand of the population—the basic line being five per thousand of the population.

GRAPHS SHewing BIRTH RATES IN THE STATES OF NEW SOUTH WALES,
VICTORIA, AND QUEENSLAND, 1860-1912.



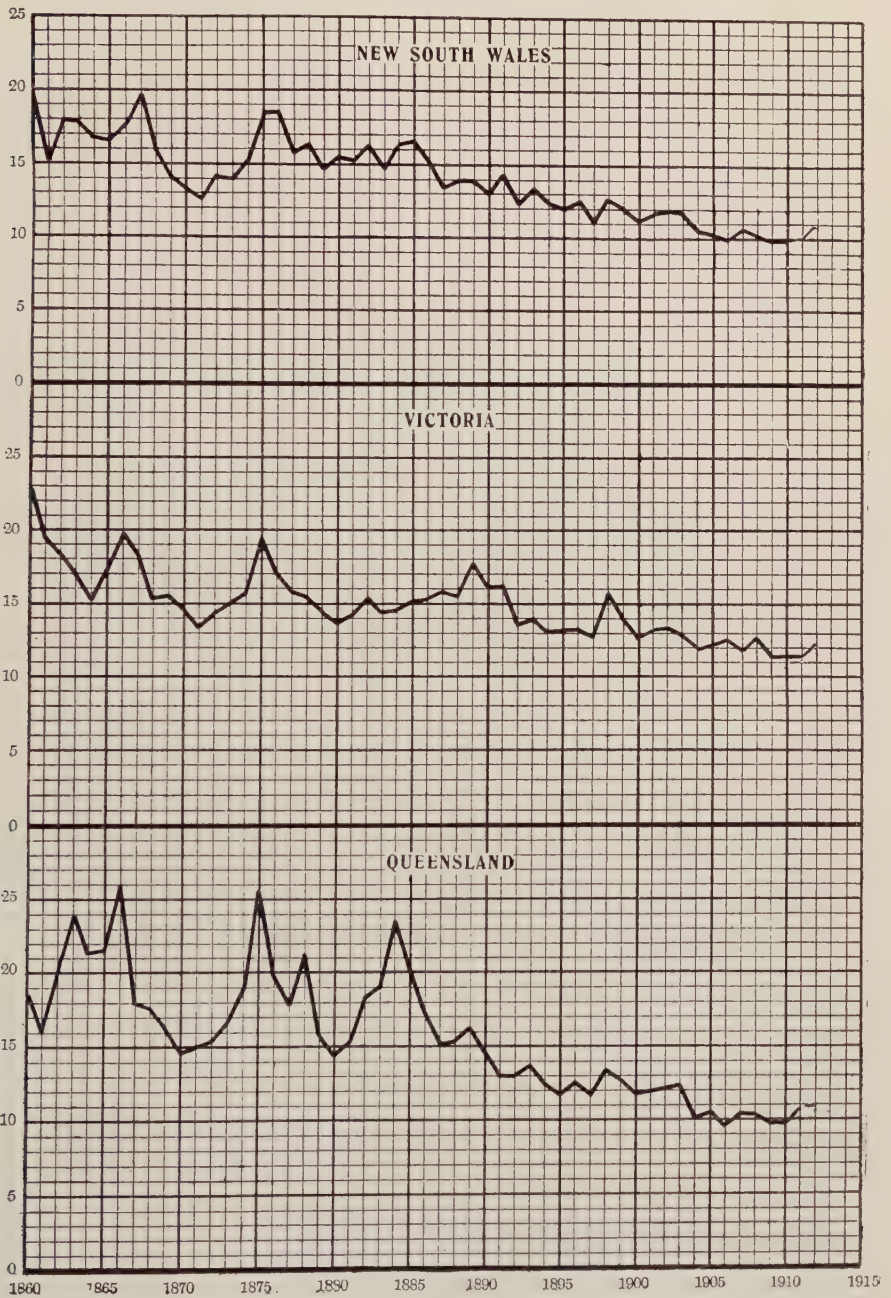
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

GRAPHS SHEWING BIRTH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA, 1860-1912.



EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one birth per thousand of the population—the basic line for each State being twenty per thousand of the population.

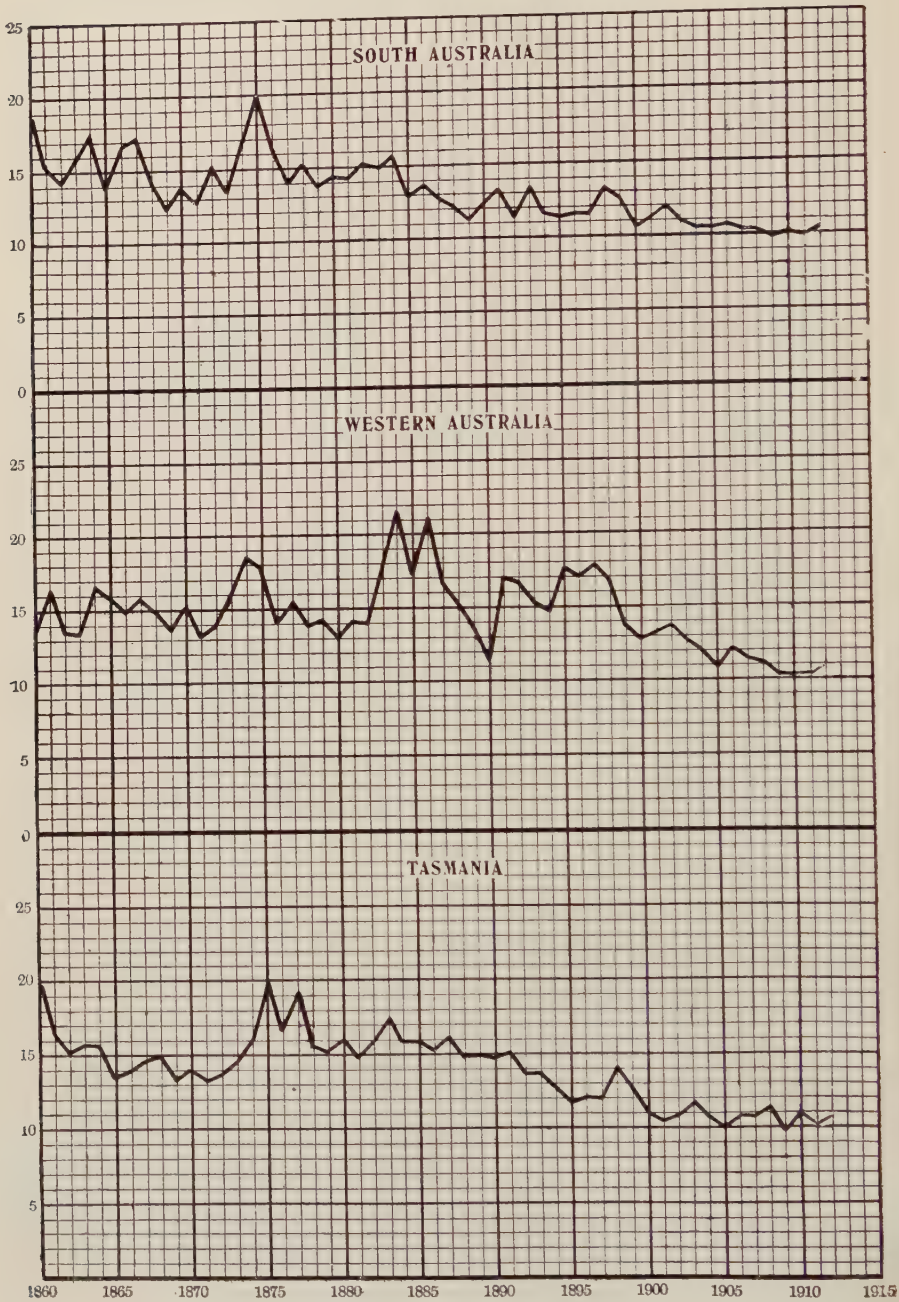
GRAPHS SHEWING DEATH RATES IN THE STATES OF NEW SOUTH WALES,
VICTORIA, AND QUEENSLAND, 1860-1912.



(See Table page 168.)

EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

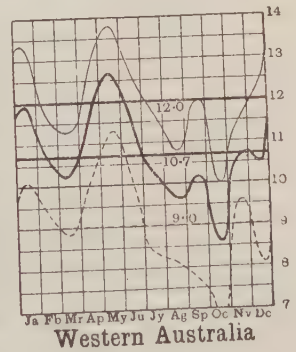
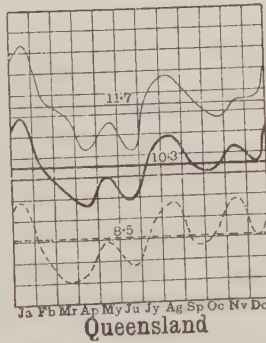
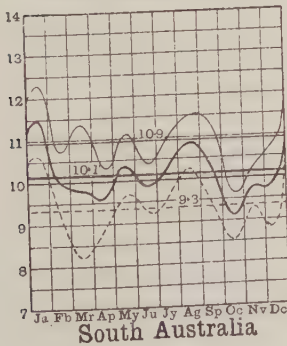
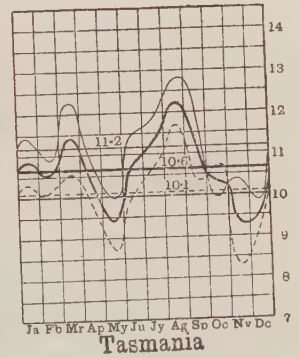
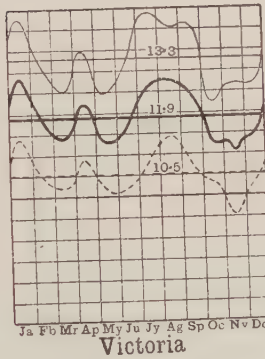
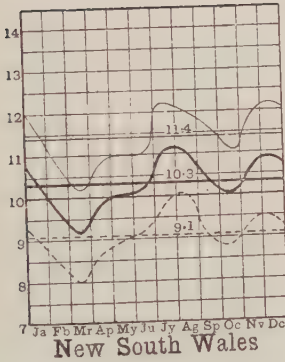
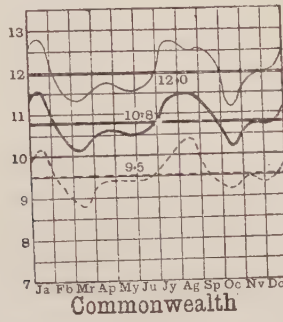
GRAPHS SHEWING DEATH RATES IN THE STATES OF SOUTH AUSTRALIA,
WESTERN AUSTRALIA, AND TASMANIA 1860-1912.



(See Table page 168.)

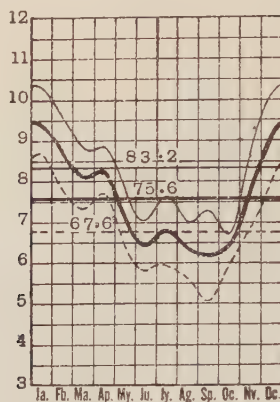
EXPLANATION OF GRAPHS.—The base of each small square represents one year's interval, and the vertical height one death per thousand of the population. The zero for each State is shewn by a thickened line.

GRAPHS SHEWING GENERAL MONTHLY DEATH RATES, 1907-1912

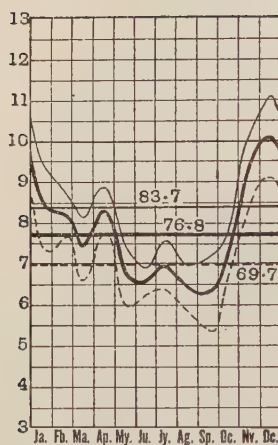


Male Death Rates shewn:
 Female " "
 General " "

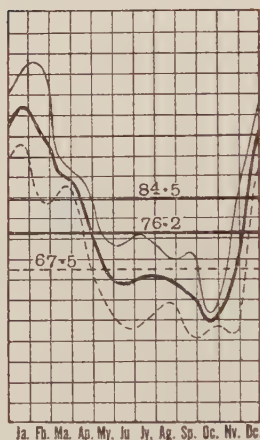
GRAPHS SHEWING INFANTILE MONTHLY DEATH RATES, 1907-1912.



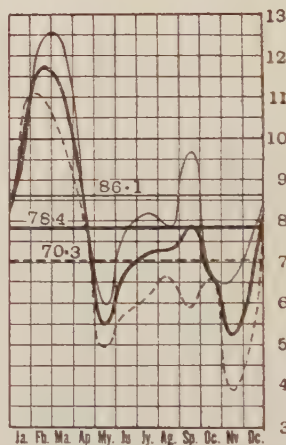
Commonwealth



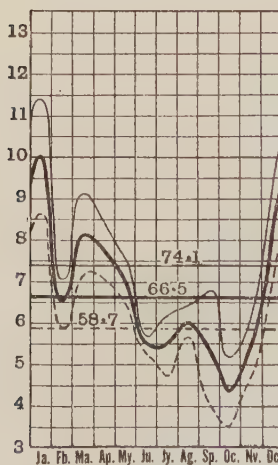
New South Wales



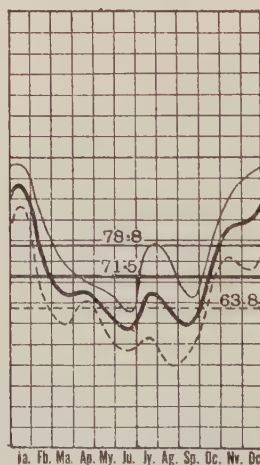
Victoria



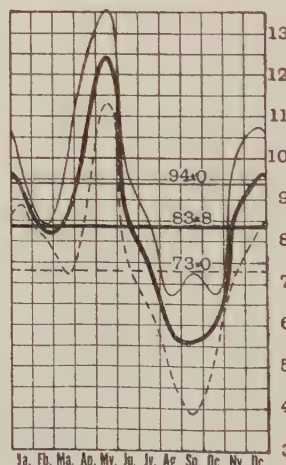
Tasmania



South Australia



Queensland



Western Australia

Male Death Rates shewn: ————
 Female " " - - - - -
 General " " ————

DEATHS OF CHILDREN UNDER 1 YEAR, COMMONWEALTH, 1912.

Age at Death.		Whooping Cough.	Pulmonary Tuberculosis.	Acute Miliary Tuberculosis.	Tubercular Meningitis.	Abdominal Tuberculosis.	Tuberculosis of other Organs.	Disseminated Tuberculosis.	Syphilis.	Meningitis.	Convulsions.	Acute Bronchitis.
Under 1 week	...	...	...	...	...	...	...	...	12	15	102	4
1 week and under 2	...	1	...	...	...	...	...	...	3	6	40	16
2 weeks	3	1	...	...	...	...	...	...	8	7	28	20
3 "	4	5	...	...	1	...	1	...	7	6	19	23
1 month	2	39	...	...	...	3	...	...	27	16	27	59
2 months	3	34	1	...	3	1	...	1	18	23	21	33
3 "	4	20	...	...	3	3	...	...	11	20	22	25
4 "	5	8	1	...	2	3	...	1	9	19	10	24
5 "	6	7	...	...	1	3	...	...	7	17	12	10
6 "	7	11	1	...	5	1	1	...	3	20	7	11
7 "	8	14	1	1	3	1	...	...	1	29	11	12
8 "	9	8	2	...	3	2	1	1	7	17	5	10
9 "	10	11	2	1	3	1	...	...	...	25	11	9
10 "	11	6	...	1	...	2	...	...	3	19	7	10
11 "	12	11	1	1	2	4	...	1	3	11	11	8
Total under 1 year		176	9	4	26	24	3	4	119	250	333	274

Age at Death.		Broncho-Pneumonia.	Pneumonia.	Diarrhoea and Enteritis.	Hernia and Intestinal Obstruction.	Malformations.	Congenital Debility, Tetanus and Sclerema.	Other Diseases peculiar to Early Infancy.	Lack of Care.	Other External Violence.	Other Causes.	Total.
Under 1 week	...	3	5	12	7	191	1,879	458	6	...	118	2,816
1 week & under 2	...	14	10	23	6	45	256	48	...	1	66	535
2 weeks	3	9	6	45	2	26	191	37	...	...	34	414
3 "	4	17	8	56	4	25	136	11	1	...	36	356
1 month	2	58	26	216	5	31	213	15	...	1	104	840
2 months	3	40	24	282	4	16	126	6	1	...	62	696
3 "	4	30	15	308	7	18	104	1	...	...	54	641
4 "	5	22	16	321	11	10	67	...	...	...	45	569
5 "	6	17	16	313	6	11	42	...	...	...	43	505
6 "	7	25	14	242	16	9	42	...	...	...	40	448
7 "	8	11	15	230	8	14	25	...	...	1	26	403
8 "	9	22	11	198	9	4	29	...	...	...	47	376
9 "	10	23	16	178	4	8	12	...	...	...	48	352
10 "	11	25	13	140	4	8	13	...	...	...	58	309
11 "	12	24	4	138	...	4	22	...	...	...	43	288
Total under 1 year		340	199	2,702	93	420	3,157	576	8	7	824	9,548

It will be seen that the maximum number of deaths from syphilis, convulsions pneumonia, hernia and intestinal obstruction, malformations, congenital debility, icterus and sclerema, other diseases peculiar to early infancy, lack of care, and other external violence occurred during the first month of life, while acute bronchitis

and broncho-pneumonia were most fatal during the second month. Diarrhoea and enteritis carried off more children in the fifth month than in any other, the numbers gradually decreasing toward the end of the year. Whooping cough reached its maximum during the second and third month of life.

21. **Age at Death of Married Males and Females, and Issue.**—"Bulletin No. 30: Commonwealth Demography" contains a number of tables, for the Commonwealth, shewing the age at marriage, age at death, duration of life after marriage, birthplaces, and occupations, in combination with the issue, of married persons who died in 1912. A short summary of the tables mentioned is given hereunder. Deaths of married males in 1912 numbered 12,881, and of married females, 11,881. The ages at death of the males ranged from 18 to 105 years, and those of the females, from 16 to 108 years. The total number of children in the families of the 12,881 males was 69,089, the maximum in one family being 23; and of the 11,881 females, 62,824, with a maximum of 22. The average number of children is shewn for various age-groups in the following table:—

AGE AT DEATH OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH, 1912.

Age at Death.	Average Family of Males.	Average Family of Females.	Age at Death.	Average Family of Males.	Average Family of Females.
Under 20 years ...	...	1.06	70 to 74 years ...	6.31	6.59
20 to 24 years ...	0.92	1.06	75 " 79 " ...	6.84	6.74
25 " 29 " ...	1.36	1.91	80 " 84 " ...	6.74	6.39
30 " 34 " ...	2.22	2.52	85 " 89 " ...	6.59	6.11
35 " 39 " ...	2.78	3.45	90 " 94 " ...	6.63	5.77
40 " 44 " ...	3.45	4.04	95 " 99 " ...	6.86	5.85
45 " 49 " ...	4.00	4.37	100 years and upwards	3.67	8.29
50 " 54 " ...	4.60	4.93	Age not stated ...	4.75	5.25
55 " 59 " ...	5.20	5.77			
60 " 64 " ...	5.71	5.91			
65 " 69 " ...	6.30	6.32	All ages ...	5.36	5.29

The figures shewn in the preceding table include the issue both living and dead; the proportion between the two, taking deceased males and females together, was about as 1000 to 311, or, roughly speaking, as ten to three. The totals are shewn in the following table:—

ISSUE OF MARRIED MALES AND FEMALES.

COMMONWEALTH, 1912.

Issue of Married Males.	Males.	Females.	Total.	Issue of Married Females.	Males.	Females.	Total.
Living ...	27,486	26,489	53,975	Living ...	23,707	22,959	46,666
Dead ...	8,095	7,019	15,114	Dead ...	8,559	7,599	16,158
Total ...	35,581	33,508	69,089	Total ...	32,266	30,558	62,824

These figures shew a masculinity in the births of 105.90, which agrees fairly well with the experience of the birth statistics, the masculinity of the births in the Commonwealth from 1902 to 1912 having ranged from 104.54 to 106.38.

22. Age at Marriage of Males and Females, and Issue.—While the table giving the average families of married males and females naturally shews an increase in the averages with advancing ages at death, the following table, which gives the average families of males and females according to the age at marriage of the deceased parents, shews a corresponding decrease in the averages as the age at marriage advances :—

AGE AT MARRIAGE OF MALES AND FEMALES, AND AVERAGE ISSUE.

COMMONWEALTH, 1912.

Age at Marriage.			Average Family of Males.	Average Family of Females.	Age at Marriage.			Average Family of Males.	Average Family of Females.
Under 20 years	...	6.33	7.13	55 to 59 years	...	0.86	...		
20 to 24 years	...	6.37	5.70	60 „ 64 „	...	1.84	...		
25 „ 29 „	...	5.54	4.24	65 years and upwards	...	1.18	...		
30 „ 34 „	...	4.82	2.83	Age not stated	...	5.35	5.31		
35 „ 39 „	...	4.06	1.55						
40 „ 44 „	...	3.53	0.43						
45 „ 49 „	...	2.69	0.15						
50 „ 54 „	...	1.90	0.08	All ages	...	5.36	5.29		

It will be seen that of women who were married at ages from 40 to 44 years, two in every five gave birth to a child, while in the case of women who were married at ages from 45 to 49 years, the proportion fell to about one in every seven.

23. Duration of Life after Marriage of Males and Females.—The duration of life after marriage has been tabulated for males and females both in combination with the age at marriage, and with the total and average issue. The tables shewing the result do not, however, lend themselves to condensation, and are, therefore, omitted here. They will be found in "Bulletin No. 30 of Commonwealth Demography," pages 173 to 178.

24. Birthplaces of Married Males and Females, and Issue.—The following table shews the birthplaces of married males and females whose deaths were registered in 1912, together with their average issue. No generalisations can, of course, be made in those cases where the number of deaths is small, and where the average family had to be worked out on small figures. But where the figures are comparatively large, as in the case of natives of the Commonwealth, differences occur between the averages of the individual States which appear inexplicable on any other ground than that of inefficient registration in some of the States. It will be noted that the differences occur both in the male and female averages. Although the figures apply to the Commonwealth as a whole, it must be borne in mind that the vast majority of deaths of natives of any one State are registered in that particular State. The average family of all deceased males who were natives of the Commonwealth was 4.77, and that of deceased females who were natives of the Commonwealth, 4.45.

BIRTHPLACES OF MARRIED MALES AND FEMALES, AND AVERAGE ISSUE. COMMONWEALTH, 1912.

Birthplaces.	Married Males.		Married Females.		Birthplaces.	Married Males.		Married Females.	
	Deaths.	Average Family.	Deaths.	Average Family.		Deaths.	Average Family.	Deaths.	Average Family.
New South Wales ...	1,822	5.17	1,915	5.04	Philippine Islands ...	2	2.50	...	...
Victoria ...	1,432	4.17	1,695	3.78	Straits Settlements ...	1	10.00	1	6.00
Queensland ...	203	3.50	335	3.29	Syria ...	5	3.00	8	3.89
South Australia ...	541	4.78	549	4.21	Other Asiatic Countries ...	...	...	2	11.00
Western Australia ...	74	5.07	80	5.83	Cape of Good Hope ...	2	5.00	...	...
Tasmania ...	402	5.66	417	5.24	Mauritius ...	5	5.20	3	4.67
Northern Territory ...	...	...	1	2.00	Natal ...	1	1.00	...	...
New Zealand... ..	66	3.35	63	3.83	Orange River ...	1	9.00	...	...
England ...	4,145	5.77	3,148	5.92	South Africa (so descd.)	11	3.36	9	7.22
Wales ...	106	5.79	54	6.06	Egypt ...	1	6.00	...	...
Scotland ...	1,106	5.84	924	5.97	Barbados ...	...	...	1	8.00
Ireland ...	1,804	6.03	2,282	5.86	Canada ...	30	4.60	8	4.89
Isle of Man ...	5	5.67	7	4.14	Jamaica ...	3	5.00	3	3.00
Other European Brit'h Possessions ...	16	5.19	9	7.22	Newfoundland ...	2	5.00	2	4.00
Austria-Hungary ...	17	5.53	2	4.50	Other American British Possessions ...	2	5.50	1	4.00
Belgium ...	4	2.75	...	...	Argentina ...	...	...	1	3.00
Denmark ...	57	5.04	15	4.80	Brazil ...	1	9.00	...	...
France ...	32	3.41	12	4.58	Chile ...	1	1.00	...	...
Germany ...	449	5.86	270	6.58	Mexico ...	1	1.00	1	9.00
Greece ...	6	6.67	3	2.67	United States... ..	52	4.98	16	2.94
Italy ...	44	5.70	3	2.00	Other American Countries ...	21	4.19	6	6.83
Netherlands ...	10	6.60	2	3.00	Fiji ...	3	1.33	1	1.00
Norway ...	28	4.68	3	5.33	Other Polynesian British Possessions...	1	10.00	...	...
Portugal ...	6	4.83	...	...	New Caledonia ...	3	6.67	...	...
Russia ...	39	4.18	8	5.89	New Hebrides... ..	1	1.00	...	...
Spain ...	9	3.44	2	10.00	Samoa ...	1	2.00	...	...
Sweden ...	67	4.82	10	2.10	Other Polynesian Islands ...	...	...	2	7.00
Switzerland ...	28	6.11	12	5.25	S. Sea Islands (so descd.)	6	2.67	1	7.00
Other Europ. Countries	33	4.15	21	5.29	At Sea... ..	51	2.71	26	6.19
British India ...	2	1.00	2	2.50	Not stated ...	44	3.00	40	4.78
Ceylon ...	...	...	1	...	Total ...	12,881	5.36	11,881	5.29
Hong Kong ...	73	2.37	3	1.67					
China ...	4	0.50	...	...					
Japan ...	1	...	...	...					
Java ...	...	...	...	...					

25.—Occupations of Married Males, and Issue.—A final tabulation shews the average issue in combination with the occupation of deceased males. When these figures are available for a number of years they will afford some clue to the much debated question as to the decrease in the birth rate among various classes of the population.

OCCUPATIONS OF MARRIED MALES, AND AVERAGE ISSUE.

COMMONWEALTH, 1912.

Occupations.	Deaths of Married Males.	Average Family.
Professional class ...	696	4.73
Domestic class ...	433	4.04
Mercantile class... ..	1,566	4.66
Engaged in transport and communication	1,014	4.74
Manufacturing class ...	1,485	5.12
Engaged in building and construction ...	842	5.43
Indefinite industrial workers	2,107	5.17
Agricultural class ...	2,131	6.65
Pastoral class ...	477	6.11
Working in mines and quarries	986	5.46
Other primary producers	83	4.83
Independent means	626	5.85
Dependents ...	82	3.94
Occupation not stated	353	5.75
Total ...	12,881	5.36

In the fifth issue of this Year Book (pp. 227 to 229), a series of observations was published dealing with the Commonwealth Rates of Infantile Mortality. These observations are not reprinted in the present issue.

§ 4. Graphical Representation of Vital Statistics.

1. **General.**—The progressive fluctuations of the numbers representing the total births and marriages are important indexes of the economic conditions and social ideals of a community. For this reason graphs have been prepared (see pages 201 and 202), shewing these fluctuations from 1860 to 1912, both for the States and the Commonwealth. The facts are very significant from the national point of view and call for serious consideration. To properly appreciate the situation it should be remembered that, normally, the increase of births and also of marriages will be similar to the increase of population. Although the marriage curve shows a falling off in marriages after 1891 (see page 202), it shows a recovery in 1894, and, with the exception of a small fall for 1903, it has continually advanced. The same characteristic is not seen in the curve of births, which discloses a recovering tendency only in 1904.

The table printed below shows the number of births, marriages and deaths which would have been experienced had the rate for 1890 continued, and reveals the significance of the facts disclosed by the curves. It may be remarked that the death rate has greatly improved, and among other countries Australia stands in a very favourable position in this respect. At the same time the decline in the marriage rate, overtaken once more in 1907, and the still more serious decline in the birth rate, in a country but sparsely populated, have an obvious and most important bearing on the national future, and on questions concerning the extent to which it is desirable to promote immigration.

ACTUAL BIRTHS, DEATHS, AND MARRIAGES.

EXPERIENCED IN THE COMMONWEALTH DURING THE YEARS 1890 TO 1912,
COMPARED WITH THE NUMBER THAT WOULD HAVE OCCURRED IF THE
RATES OF 1890 HAD REMAINED IN OPERATION.

Year.	BIRTHS.		DEATHS.		MARRIAGES.	
	Actual.	Number of Births that would have been experienced if the 1890 birth rate had been in operation.	Actual.	Number of Deaths that would have been experienced if the 1890 death rate had been in operation.	Actual.	Number of Marriages that would have been experienced if the 1890 marriage rate had been in operation.
1890	108,683		44,449		23,725	
1891	110,187	111,802	47,430	45,737	23,862	24,419
1892	110,158	114,502	42,268	46,842	22,049	25,009
1893	109,322	116,617	45,801	47,707	20,631	25,470
1894	104,660	118,734	42,958	48,573	20,625	25,933
1895	105,084	121,002	43,080	49,501	21,564	26,428
1896	100,134	123,212	45,202	50,405	23,068	26,911
1897	101,137	125,419	43,447	51,308	23,939	27,393
1898	98,845	127,371	51,406	52,106	24,472	27,819
1899	100,638	129,088	47,629	52,809	25,958	28,194
1900	102,221	130,848	44,060	53,529	27,101	28,579
1901	102,945	132,599	46,330	54,245	27,753	28,961
1902	102,776	134,603	48,078	55,065	27,926	29,399
1903	98,443	136,189	47,293	55,714	25,977	29,745
1904	104,113	137,917	43,572	56,420	27,682	30,122
1905	104,941	139,959	43,514	57,256	29,004	30,569
1906	107,890	142,030	44,333	58,103	30,410	31,021
1907	110,347	144,248	45,305	59,011	32,470	31,505
1908	111,545	146,720	46,426	60,022	32,551	32,045
1909	114,071	149,526	44,172	61,170	33,775	32,658
1910	116,801	152,869	45,590	62,537	36,592	33,388
1911	122,193	157,072	47,869	64,257	39,482	34,306
1912	133,088	162,477	52,177	66,468	42,147	35,487

2. Graphs of Annual Births, Commonwealth and States (page 201).—A striking feature of the graphs of births is the practically continuous increase in the number of births exhibited in the graph for the Commonwealth from 1860 to 1891, and the marked variations of subsequent years. As the curve clearly shews, a turning point in the number of births occurred in 1891, whilst, as regards the separate States, New South Wales and Tasmania date their decline in number from 1893, Victoria from 1891, and Queensland from 1890. In South Australia the corresponding decline took place as early as 1885, while in Western Australia the increase in number of births has been practically continuous throughout.

It is of special interest to note the decline in births associated with the commercial crisis of 1891-3, and also the decline occurring in 1903, an accompaniment of the severe drought of that period.

In the case of New South Wales the graph crosses that of Victoria in 1879, *i.e.*, the births for that year were sensibly identical in the two States. A fairly continuous increase was experienced in the former State from 1860 to 1893, the only marked fluctuation being a sudden decline in 1889 and an equally rapid recovery in 1890. From 1893 to 1898 a somewhat rapid decline again took place, succeeded by a rise, the continuity of which was broken only by a sharp decline in 1903 and recovery in 1904.

In the case of Victoria the graph shews the increase between 1860 and 1880 to have been comparatively slight, the curve being a gradual rise, with fluctuations more or less marked to 1873, with a subsequent decline. From 1880 to 1891 the increase in the number of births is seen to be very rapid and practically continuous, while from 1891 to 1898 an equally sharp and continuous decline was experienced. A further rise and fall took place between 1898 and 1903, succeeded by a continuous rise from the last-mentioned year to 1907, and a slight fall in 1908, followed by a recovery in 1909.

Starting in 1860 with a lower number of births than any State except Western Australia, the Queensland graph shews that the births increased somewhat rapidly until 1867. The equality in the number of births in Queensland and Tasmania in 1864 is shewn by the Queensland curve crossing the Tasmanian curve at the line for that year. From 1867 to 1882 a continuous though somewhat less rapid increase was experienced, followed by a very rapid rise to 1890, in which year Queensland's maximum number of births was recorded. The South Australian graph is crossed by that of Queensland at the year 1885. From 1890 onwards the number of births has fluctuated somewhat, but has, on the whole, retained a practically stationary position at a height rather less than that of 1890. The most serious variation was a sudden fall in 1903, the drought year, and rapid recovery in 1904, with a further fall in 1905 and a continuous rise since 1906.

The South Australian graph, a slow but practically continuous rise from 1860 to 1885, exhibits the steady increase in the total number of births. This rise is followed by a slow but fluctuating decline to 1903, and a slight recovery to 1912.

The Tasmanian curve may be regarded as made up of five portions, of which the first, from 1860 to 1877, represents a period of very slight variation, with, on the whole, an increase; the second, from 1877 to 1884, a period of continuous and moderately rapid increase; the third, from 1884 to 1893, a period of rapid increase; the fourth, from 1893 to 1898, a period of continuous but slow decrease; and the fifth, from 1898 onwards, a period of steady recovery.

The Western Australian curve indicates that an increase, which was practically continuous but very slow, took place from 1860 to 1884, and that a somewhat quicker rate of increase, experienced from 1884 to 1896, was succeeded by a still more rapid and very satisfactory rate of increase from 1896 onwards.

It will be seen that the years in which the highest points were reached by the several curves are as follows:—

State ...	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Year ...	1912	1891	1912	1912	1912	1912	1912

3. Graphs of Annual Marriages, Commonwealth and States (page 202).—The Commonwealth marriage graph from 1860 to 1885 reveals a moderate but somewhat fluctuating increase in the annual number of marriages between 1860 and 1871, a more rapid increase between 1871 and 1879, a still more rapid increase between 1879 and 1885. From 1885 to 1891 the numbers continued to increase, but with marked fluctuations in rate. The financial crisis associated with the period subsequent to the latter year was accompanied by a strongly-marked decline in the number of marriages, which reached its lowest point in 1894. From that year onwards a fairly rapid recovery was effected, the record for 1891 being exceeded by that of 1897. This progress was maintained until 1902, when the severe drought of that and the succeeding year were collateral with a rapid fall in the number of marriages. An equally rapid recovery, however, has since taken place, and the number of marriages in the Commonwealth during 1912 was greater than in any preceding year.

4. Graphs of Annual Deaths, Commonwealth and States (page 203).—The curves shewing the progression of the annual number of deaths indicate clearly that the periods for which exceptionally large numbers of deaths occurred were:—(a) 1866-7, (b) 1875-6, (c) 1884-5, (d) 1889-1891, (e) 1893, (f) 1898, and (g) 1902-3. It is remarkable that in each of the periods specified the phenomenon of a relatively high number of deaths was experienced in the majority of the States. Thus, as regards 1866-7, all the States except Western Australia and Tasmania were so affected; in 1875-6 all except Western Australia; in 1884-5 all were affected; in 1889 all except Western Australia and South Australia; in 1891 all except Queensland; whilst in 1893 and 1898, and 1902-3 all were affected. The fact that the periods of high death rates have been practically identical in the several States furnishes an indication that the excessive mortality has been due to a considerable extent to some common cause operating throughout the Commonwealth.

It may be noted as curious that periods of heavy mortality have occurred at intervals of approximately nine years, viz.:—1866-7, 1875-6, 1884-5, 1893, and 1902-3. There are, however, two marked increases between the third and fourth dates, and one between the fourth and fifth. Thus there is no real indication of the periodicity of the death rate.

Periods in which the number of deaths was exceptionally low are far less clearly defined than those in which the number was high, and the agreement amongst the States is also less complete. The principal periods of low mortality may be said to be 1861, 1869-71, 1879, 1892, 1897, 1900, 1904-5, 1909.

5. Graphs of Annual Birth, Death, and Marriage Rates and of Rate of Natural Increase—Commonwealth (page 204).—(i.) *General.* These graphs represent the number of births, deaths, and marriages, and the excess of births over deaths (natural increase) per 1000 of the population of the Commonwealth, for each of the years 1860 to 1912.

(ii.) *Births.* In the case of births, the graph indicates a well marked decline in rate during the period, and represents a fall from 42.56 per 1000 of population in 1860 to 28.65 per 1000 in 1912. This enormous reduction has been subject to small fluctuations during the period under review, but may, on the whole, be said to have been in evidence throughout. There are, however, two periods of arrested decline noticeable, one from 1877 to 1890, and the other from 1898 to the present time. The course of the graph thus indicates a rapid fall from 42.56 in 1860 to 34.99 in 1877, succeeded by a fluctuating but, on the whole, fairly stationary period to 34.98 in 1890, then a fall even more rapid to 27.15 in 1898, and a further comparatively stationary period to 28.65 in 1912. The lowest point reached, viz., 25.29, was attained in 1903, the year in which the Commonwealth suffered severely from the worst drought it has ever experienced.

Since then a small but well defined advance in the birth rate has been in evidence. A declining birth rate is usually due to complex causes, amongst which the variations in the age constitution of the population, and the adoption of preventative measures, are generally considered the most potent.

(iii.) *Deaths.* The three graphs relating to deaths furnish particulars concerning the rates experienced during the period amongst males and females separately, and in the population as a whole, the latter occupying naturally a position between the other two. Throughout the period the rate for males has largely exceeded that for females, but the fluctuations in the two rates have synchronised remarkably, indicating that the conditions which have been responsible for the marked variations which have occurred from time to time have affected males and females alike. On the whole, the graphs furnish clear evidence of a satisfactory decline in the death rate of the Commonwealth, a fall having taken place from 20.86 in 1860 to 11.23 in 1912. The graphical representation of the death rates brings into prominence five years in which the rates were exceptionally high when compared with those of adjacent years. These years are 1860, 1866, 1875, 1884, and 1898. The principal cause of the excessive rate of 1860 was the prevalence in that year of measles, scarlatina, and diphtheria, while the high rates of 1866, 1875, and 1898 were also largely due to epidemics of measles. Prior to 1892, when a rate of 12.91 was experienced, the lowest general death rate for the Commonwealth was that of 1871, viz., 13.24. The highest male death rate for the period was 20.97 in 1860, and the lowest 11.51 in 1909. For females the highest was 20.71 in 1860, and the lowest 9.06 in 1909. The difference between the male and female rate has, since 1869, been fairly constant, and has ranged between 1.97 and 3.44, with a mean value of about 2.7.

(iv.) *Marriages.* In the case of the graph representing marriage rates, the fluctuations are less abrupt than in the case of the birth rate and death rate graphs, and the rate for 1912, the final year of the period, viz., 9.07, does not differ very considerably from that of 1860, which was 8.42. The lowest marriage rate for the period was that of 1894, viz., 6.08, marking the culmination of the commercial and financial depression indicated by the declining rates from 1888 onwards. From 1894 to the present time a satisfactory increase has been in evidence, disturbed only by the sharp decline which, in 1903, accompanied the severe drought experienced in the Commonwealth in that year.

(v.) *Natural Increase.* This graph, which represents the excess of births over deaths per 1000 of population, exhibits marked fluctuations arising from the combined fluctuations in birth and death rates. Thus, corresponding to the high death rates of 1860, 1866, 1875, and 1898, there are exceptionally low rates of natural increase, accentuated in the last-mentioned year by a comparatively low birth rate. A combination of low birth rate and comparatively high death rate was also responsible for a very low rate of natural increase in 1903. The highest rate of natural increase for the period was 26.58 in 1864, and the lowest 13.03 in 1898.

6. *Graphs of Annual Birth Rates—States* (pages 205 and 206).—These graphs furnish for the several States information similar to that supplied in the graph on page 204 for the Commonwealth as a whole. It will be seen that in every case the total effect has been an extensive decline in rate, subject to very marked fluctuations. In all the States the period from 1875 to 1895 was one of arrested decline, if not of actual advance, in the birth rate. With the exception of the very low rate accompanying the drought in 1903, the variations in any of the States since 1901 have not been very marked, and in some cases a slight tendency to increase is in evidence.

The highest birth rates during the period were as follows:—New South Wales (1864), 44.00; Victoria (1862), 44.71; Queensland (1860), 47.93; South Australia (1862),

45.44; Western Australia (1860), 38.96; and Tasmania (1884), 36.63. The following were the lowest rates for the period :—New South Wales (1903), 25.44; Victoria (1910), 24.51; Queensland (1903), 24.53; South Australia (1903), 23.84; Western Australia (1896), 23.44; Tasmania (1899), 27.43.

7. Graphs of Annual Death Rates—States (pages 207 and 208).—These graphs furnish for the several States similar information to that given for the Commonwealth as a whole in the diagram on page 204, and indicate in each case a satisfactory decline in death rate. It may be noted that an exceptionally high death rate was experienced in all the States in 1875, and that a similar uniformity, though on a smaller scale, is observable for the year 1898, the principal cause in each case having been an epidemic of measles. The highest death rates experienced during the period were as follows :—New South Wales (1867), 19.79; Victoria (1860), 22.77; Queensland (1866), 25.96; South Australia (1875) 19.97; Western Australia (1884), 21.54; and Tasmania (1875), 19.99. The following were the lowest death rates for the period :—New South Wales (1909 and 1910), 9.89; Victoria (1909 and 1911), 11.45; Queensland (1906), 9.50; South Australia (1909), 9.74; Western Australia (1910), 10.11; and Tasmania (1909), 9.68.

8. Graphs shewing Variations in Annual Death Rates from Month to Month.—The graphs on pages 209 and 210 shew for the Commonwealth as a whole and for each of the six States the annual death rates for males, females, and persons calculated for equalised months, and the infantile death rate, calculated in the same way, and also distinguishing males, females, and persons. Further particulars in regard to these graphs will be found on page 180.

SECTION VI.

LAND TENURE AND SETTLEMENT.

§ 1. Introduction and Early History.

1. **Introduction.**—A comprehensive description, in a classified form, of the land tenure systems of the several States has been given in preceding issues of this book; see especially Year Book No. 4 (pp. 235 to 333). The details of that description have been necessarily condensed in the present issue, and for more complete information for past years, reference may therefore be made to Year Book No. 4. The historical matter dealing with the development of land legislation in the individual States may be found in Year Book No. 2 (pp. 263 to 272), and in a more condensed form in Year Books No. 3 (pp. 245 to 254), and No. 4 (pp. 235 to 244).

§ 2. Land Legislation in Individual States.

1. **New South Wales.**—(i.) *Acts now in Force.* The Crown Lands Act of 1884 and the supplementary Act of 1889 were passed chiefly for the purpose of putting an end to speculative selection without *bonâ fide* intention of settlement. Pastoral leases were required to be surrendered to the Crown and divided into two equal parts, one of which was returned to the lessee under a lease with a fixity of tenure for a term of years, the other half the lessee was allowed to hold under an annual occupation license, but this half was always open for selection.

Nevertheless accumulation of land into large estates continued, and settlement proceeded slowly. Entirely new principles of agrarian legislation have been embodied in the Crown Lands Acts 1895 to 1912, the Labour Settlements Act 1902, the Closer Settlement Acts 1904 to 1909, and the Closer Settlement Promotion Act 1910, which offer *bonâ fide* settlers special inducements by the introduction of new forms of tenure on easy terms and conditions.

(ii.) *The Western Lands Acts.* All Crown lands in the Western Division of New South Wales are now subject to the special provisions of the Western Lands Acts 1901 and 1905. All leases or occupation licenses could be brought within the provisions of the Western Lands Act by application before the 30th June, 1902. Otherwise the leases or licenses were dealt with by the Board as if the Act had not been passed. All leases issued or brought under the provisions of the Western Lands Acts expire on the 30th June, 1943, except in cases where part of the land leased is withdrawn for the purpose of sale by auction, or to provide small holdings, in which case an extension of the term of lease of the remainder may be granted as compensation for the part withdrawn.

2. **Victoria.**—(i.) *Acts now in Force.* The Consolidating Land Act of 1901, amended by the Acts of 1903, 1904, 1905, 1909, 1910, and 1911, deals with the whole system of land occupation and alienation in this State. Closer Settlement was provided for by the Land Acts of 1898 and 1901 and amendments, until the introduction of the Closer Settlement Act 1904, amended in 1906, 1907, 1909, 1910, and 1911. Other special forms of tenure have been provided for by the Settlement on Lands Act 1893, and the Small Improved Holdings Act 1906; these, however, are now embraced in the Land Acts and Closer Settlement Acts respectively.

The Land Act 1910 allows large tracts of land in the counties of Millewa, Croajingolong, and Dargo hitherto reserved for public purposes to be dealt with as unalienated Crown Lands. It is proposed to pass an amending and consolidating Land Act at an early date.

(ii.) *Mallee Lands.* The lands in the Mallee territory, comprising an area of about 11,000,000 acres in the north-western district of the State, can be cleared at a moderate expenditure. An extension of railway facilities and of successful systems of water supply should bring this territory into greater prominence as a field for agricultural enterprise. More than one-half of this area is unalienated and available for occupation.

Alienation of Mallee lands is now dealt with by a special part of the Land Act of 1901 (see § 6, 3, iii.), as amended in 1904, by the Murray Settlements Act 1907, and by the Land Act 1911.

3. **Queensland.**—*Acts now in Force.* The Closer Settlement Act 1906 and the Land Act 1910 control the alienation of Crown lands in this State. The latter Act consolidates, amends and simplifies the law relating to the occupation and alienation of Crown lands.

4. **South Australia.**—*Acts now in Force.* The Crown Lands Act 1903, amended in 1905, 1906, 1909, 1910, 1911, and 1912, repealed and consolidated previous Land Acts, and also repealed the earlier Closer Settlement and Village Settlement Acts. Acts amending the provisions relating to Closer Settlement were passed in 1910, 1911, and 1912. The Pastoral Act 1904 controls the pastoral occupation of lands, and the Irrigation and Reclaimed Land Acts of 1908, 1909, and 1910 provide for leases of reclaimed and irrigable lands.

5. **Western Australia.**—*Acts now in Force.* The Land Act 1898, which consolidated previous legislation as to the management of Crown lands, has in turn been amended at various times, and, with such amendments, is now in force. The principle of repurchasing Crown lands for the purpose of Closer Settlement was introduced by the Agricultural Lands Purchase Acts 1896 to 1904; these Acts were repealed and consolidated by the Agricultural Lands Purchase Act 1909.

6. **Tasmania.**—*Acts now in Force.* The law relating to land tenure and settlement is now consolidated in the Crown Lands Act 1911; and in Closer Settlement Acts 1906, 1907, 1908, and 1911.

7. **Northern Territory.**—Prior to the transfer of the Northern Territory to the Commonwealth on the 1st January, 1911, the sale and occupation of lands in the Territory were regulated by the Northern Territory Crown Lands Act 1890, the Northern Territory Land Act 1899, and the Northern Territory Tropical Products Act 1904, but from that date the further alienation and occupation of land in the Territory were suspended, pending a complete reorganisation of the system of land settlement by the Commonwealth Government. In December, 1912, an ordinance, cited as the Crown Lands Ordinance 1912, dealing with this question, was made, by which the conditions of land tenure and settlement in the Territory are now determined. Under this ordinance no further alienation of Crown lands is permitted, unless such alienation is in pursuance of existing agreements.

8. **Administration and Classification of Crown Lands.**—In each of the States of the Commonwealth there is now a Lands Department under the direction of a responsible Cabinet Minister, who is charged generally with the administration of the Acts relating to the alienation, occupation, and management of Crown lands. The administrative functions of most of the Lands Departments are to some extent decentralised by the division of the States into what are usually termed Land Districts, in each of which there is a Lands Office, under the management of a land officer, who deals with applications for selections and other matters generally appertaining to the administration of the Acts within the particular district. In some of the States there is also a Local Land Board or a Commissioner for each district or group of districts. In the Northern Territory the administration of the regulations relating to the occupation and management of Crown lands is in the hands of a Classification Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor.

In most of the States, Crown lands are classified according to their situation, the suitability of the soil for particular purposes, and the prevailing climatic and other conditions. The modes of tenure under the Acts, as well as the amount of purchase money or rent and the conditions as to improvements and residence, may vary in each State according to the classification of the land. The administration of certain special Acts relating to Crown lands has in some cases been placed in the hands of a Board under the general supervision of the Minister; for such purpose, for instance, are constituted the Western Lands Board in New South Wales, the Lands Purchase and Management Board in Victoria, and the Closer Settlement Board in Tasmania.

In each of the States and in the Northern Territory there is also a Mines Department, which is empowered under the several Acts relating to mining to grant leases and licenses of Crown lands for mining and auxiliary purposes. Such leases and licenses are more particularly referred to in a later part of this section. (See § 9.)

Full information respecting lands available for settlement or on any matter connected with the selection of holdings may be obtained from the Commonwealth representative in London, from the Lands Departments, or from the Agents-General of the respective States. The administration and classification of Crown lands in each State were more fully dealt with in Year Book No. 2, (p. 273-6).

§ 3. Tenures under which Crown Lands may be Alienated or Occupied.

1. Introduction.—The freehold of Crown lands in the several States of the Commonwealth may now ordinarily be alienated either by free grant (in trust for certain specified purposes), by direct sale and purchase (which may be either by agreement or at auction), or by conditional sale and purchase. Crown lands may be occupied in the several States under a variety of forms of leases and licenses, issued both by the Lands and the Mines Departments.

2. Classification of Tenures.—The tabular statement given on pages 224 and 225 shews the several tenures under which Crown lands may be acquired or occupied in each State of the Commonwealth. The forms of tenure are dealt with individually in succeeding parts of this section. In the State of Victoria it is proposed to amend and consolidate the Land Acts at an early date, and to abolish some of the existing forms of tenure. Reference to any amending Acts which are passed up to the latest available date prior to the publication of this book may be found in the Appendix.

(i.) *Free Grants, Reservations, and Dedications.* The modes of alienation given in this category include all free grants either of the fee simple or of leases of Crown lands. "Free" homesteads in Queensland and Western Australia are not included in this class, these tenures being free in the sense that no purchase money is payable, but not free from residential and improvement conditions. Reservation and dedication, which are ordinarily conditions precedent to the issue of free grants, are also dealt with therein.

(ii.) *Sales by Auction and Special Sales.* This class of tenure includes all methods by which the freehold of Crown lands may be obtained (exclusive of sales under the Closer Settlement and kindred Acts) for cash or by deferred payments, and in which the only condition for the issue of the grant is the payment of the purchase-money.

(iii.) *Conditional Purchases.* In this class are included all tenures (except tenures under Closer Settlement and kindred Acts) in which the issue of the grant is governed by the fulfilment of certain conditions (as to residence or improvements) other than, or in addition to, that of the payment of purchase money.

(iv.) *Leases and Licenses.* This class includes all forms of occupation of Crown lands (other than under Closer Settlement and kindred Acts) for a term of years under leases and licenses issued by the Lands Departments. As the terms indicate, the freehold cannot be obtained under these forms of tenure.

(v.) *Closer Settlement Sales, Leases, and Licenses.* In this division are included all forms of tenure provided for under the various Closer Settlement Acts, and also under kindred Acts, such as the Village Settlements and Small Holdings Acts.

(vi.) *Mines Departments' Leases and Licenses.* The tenures specified include all methods in which Crown lands may be occupied for mining and auxiliary purposes under leases and licenses issued by the Mines Departments in the several States.

3. Limitation of Tenures in New South Wales.—In October, 1910, it was officially stated, that it was the policy of the Government to discontinue the granting of the freehold of Crown Lands. Under the Crown Lands Act 1912 this policy was given effect to by the discontinuance of the disposal of Crown Lands by conditional purchase or as homestead selections, and by the institution of several new forms of tenure, viz., homestead farms, suburban holdings, and Crown leases.

The first two are leases in perpetuity, while the term of a Crown lease is 45 years.

4. Tenure of Lands by Aliens.—In the States of New South Wales, Queensland, South Australia and Tasmania restrictions are imposed upon the tenure of lands by aliens (*i.e.*, persons other than natural-born or naturalised British subjects). In Victoria and Western Australia there are no such restrictions.

(i.) *New South Wales.* Under the Crown Lands Act 1895 (sections 40 and 41), an alien is not qualified to apply for a homestead selection, conditional purchase lease, settlement lease, original homestead lease, or original conditional purchase, unless he has resided in New South Wales for one year, and at the time of making application he lodge a declaration of his intention to become naturalised within five years. If he fails to become naturalised within that period, the land is forfeited.

Under the Crown Lands Act 1912 (section 32) any alien who shall become the holder of a homestead farm, a suburban holding, or Crown lease, or a lease within an irrigation area shall become naturalised within three years after his becoming such holder. Failure to comply with this regulation involves forfeiture of such holding, together with all improvements thereon.

(ii.) *Victoria.* Under the Aliens Act 1890 (section 3), every alien resident in Victoria may acquire, either by grant from the Crown or otherwise, both real and personal property.

(iii.) *Queensland.* Under the Land Act 1910 (section 59 B and 62) an alien cannot apply for any land in Queensland unless he obtain a certificate that he is able to read and write from dictation, words in such language as the Minister for Lands may direct. If he acquire a selection he must within five years of such acquisition become a naturalised subject.

(iv.) *South Australia.* In South Australia, Asiatics are disqualified from holding perpetual leases of lands in irrigation areas under Section 18 of the Irrigation and Reclaimed Lands Act 1908.

(v.) *Western Australia.* In this State aliens are under no disability as regards the acquisition of the freehold of lands already alienated. Every application to acquire Crown lands, whether by a British subject or an alien, is subject to the approval of the Minister for Lands, with an appeal to the Governor-in-Council.

(vi.) *Tasmania.* Under the Aliens Act 1861 (section 2), aliens cannot hold real estate. An alien, if the subject of a friendly State, may, however, occupy lands for any term not exceeding twenty-one years.

(vii.) *Northern Territory.* No restrictions are imposed upon the tenure of lands by aliens, excepting that under the Mining Act 1903, Asiatic aliens are disqualified from holding gold or mineral leases.

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

New South Wales.	Victoria.	Queensland.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Volunteer land grants Reservations and dedications under Land Act 1884 and Mining Act 1906	Free grants in trust and re- servations under Land Act 1901	Free grants in trust Reservations under Land Act 1910 and under State Forests and National Parks Act 1906
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash or on credit After-auction sales Special sales Improvement purchases	Auction sales for cash or on credit Special sales	Auction sales for cash or on credit After-auction sales Special sales Unconditional selections
CONDITIONAL PURCHASES.		
Residential or non-residential conditional purchases Conversion of conditional pur- chase leases Homestead selections	Agricultural allotments, resi- dential or non-residential Grazing allotments, resi- dential or non-residential Selection from grazing area, perpetual or auriferous leases Selection from pastoral leases Mallee agricultural licenses Murray settlements leases Selection purchase leases	Agricultural farms Agricultural homesteads Prickly pear selections Free homesteads
LEASES AND LICENSES.		
Conditional leases Conditional purchase leases Settlement leases Improvement leases Annual leases Residential leases Special leases Snow leases Pastoral leases Scrub leases Inferior lands leases Occupation licenses Western lands leases Homestead farms Suburban holdings Crown leases	Grazing area leases Perpetual leases Mallee leases Licenses of auriferous lands Leases of swamp or reclaimed lands Grazing licenses Leases and licenses for other than pastoral or agricultural purposes State forest and timber re- serve licenses	Grazing homesteads Grazing farms Occupation licenses Special leases Perpetual lease selections Pastoral leases
CLOSER SETTLEMENT SALES, LEASES AND LICENSES.		
Sales by auction Closer settlement purchase Annual leases Labour settlements	Special sales	Sales by auction Agricultural farms Unconditional selections
MINES DEPARTMENTS, LEASES AND LICENSES.		
Miners' rights Business licenses Authorities to prospect Leases	Mining leases Special licenses Miners' rights Business & residence licenses	Miners' rights Mining leases and licenses Miners' homestead leases

CLASSIFICATION OF TENURES UNDER WHICH CROWN LANDS MAY BE ALIENATED OR OCCUPIED.

South Australia.	Western Australia.	Tasmania.
FREE GRANTS, RESERVATIONS, AND DEDICATIONS.		
Free grants in trust Reservations and dedications under Crown Lands Act 1903 Artesian leases	Free grants in trust and free leases Reservations under Land Acts 1898 and 1906	Free leases Reservations under Crown Lands Act 1911
SALES BY AUCTION AND SPECIAL SALES.		
Auction sales for cash After-auction sales Sales for special purposes	Auction sales for cash (The right to lease town and suburban lots are sold by auction)	Auction sales for cash or on credit After-auction sales Special sales of residence or business allotments
CONDITIONAL PURCHASES.		
Agreements to purchase Special agreements under Pin- naroo Railway Act	Conditional purchase, resi- dential or non-residential Conditional purchase by direct payment Conditional purchase of small blocks Free homestead farms Conditional auction sales	Selection of rural lands Homestead areas Selection in mining areas Conditional auction sales
LEASES AND LICENSES.		
Perpetual leases Miscellaneous leases Miscellaneous grazing and cul- tivation leases Irrigation and reclaimed land leases Special licenses Pastoral leases Leases with right of purchase	Pastoral leases Timber licenses Special leases Quarrying licenses	Grazing leases Miscellaneous leases Timber licenses and leases Occupation licenses Temporary licenses
CLOSER SETTLEMENT SALES, LEASES, AND LICENSES.		
Sales by auction Agreements to purchase Miscellaneous leases Irrigation and reclaimed area leases Village settlements Homestead blocks	Sales by auction Conditional purchases Workingmen's blocks	Special sales Leases with right of purchase
MINES DEPARTMENTS' LEASES AND LICENSES.		
Miners' rights Mining leases Miscellaneous leases Business claims Occupation licenses	Miners' rights Mining leases Miners' homestead leases	Prospectors' licenses Miners' rights Mining leases Miscellaneous licenses

NOTE.—*Northern Territory.*—By the Crown Lands Ordinance of 1912, the only forms of tenure under which land may be held in the Northern Territory, exclusive of land held under pre-existing rights, is that of leasehold. See § 7 of this section.

§ 4. Free Grants, Reservations, and Dedications.

1. **Introduction.**—Although free grants of Crown lands were virtually abolished as far back as 1831, the Land Acts of all the States now contain provisions under which the free alienation or occupation of Crown lands for certain specified purposes—comprising generally charitable, educational, and public purposes—is allowed. In all the States, also, Crown lands may be excepted from sale and reserved to the Crown or dedicated for various public and special purposes. Generally, reservation and dedication are conditions precedent to the issue of a free grant. In addition to reservations of a permanent nature, temporary reservations are also made, but these are, as a rule, subject to considerable fluctuations in area by reason of withdrawals, renotifications, and fresh reservations.

The following table shews the area for which free grants were issued and the areas permanently reserved or dedicated in each State during 1901, and from 1908 to 1912 inclusive:—

PARTICULARS OF FREE GRANTS, RESERVATIONS, AND DEDICATIONS,
1901 AND 1908-12.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
FREE GRANTS.							
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	282	7	425	5	156	10†	885
1908 ...	1,575	169	463	38	265	110†	2,620
1909 ...	1,334	165	281	28	299	270†	2,377
1910 ...	2,039	103	186	300	280	288†	3,196
1911 ...	2,186	38,830	287	211	309	109†	41,932
1912 ...	3,805	358	283	173	2,663	3,054	10,336
RESERVATIONS AND DEDICATIONS.							
1901 ...	1,595	19,278	811,200	‡	189,856	4,231	1,026,160§
1908 ...	1,425	65,883	1,371,259	13,117	664,634	1,302	2,117,620
1909 ...	1,967	34,504	498,515	270,523||	394,266	997,213	2,196,988
1910 ...	437	1,575	122,272	6,587	1,985,807	24,825	2,141,503
1911 ...	2,195	34,080	200,062	14,179	4,603,748	16,949	4,871,213
1912 ...	1,915	3,686	250,372	13,975	724,757	14,402	1,009,107

* Including both permanent and temporary reservations and dedications. † Free leases.
‡ Not available. § Exclusive of South Australia. || Including Northern Territory.

2. **New South Wales.**—Under Sections 104 to 106 of the Crown Lands Act 1884, Crown lands may be reserved or dedicated for certain charitable, educational, and public purposes therein specified. No fresh promises of dedication for religious purposes were made after the 11th May, 1880, on which date a resolution against any further such grants was passed by the Legislative Assembly. During 1912-13, 10 free grants comprising a total area of 500 acres were issued under the Volunteer Force Regulations Act 1867.

(i.) *Reservations.* In addition to the reservations under Sections 104 to 106 of the Act of 1884, referred to above, Crown lands may also be temporarily reserved as sites for cities, towns, or villages under Section 101 of the same Act, and may be reserved for mining purposes under Section 106 of the Mining Act 1906. Crown lands within one mile of any made or projected railway may be temporarily reserved from sale under Section 103 of the Crown Lands Act 1884, and under Sections 112 to 114 of that Act any Crown lands may be reserved from sale for the preservation and growth of timber. Further, under Section 39 of the Crown Lands Act 1889, Crown lands may be reserved by notification in the *Gazette* from being sold or let upon lease or license, in such particular manner as may be specified, or may be reserved from sale or lease generally.

(ii.) *Areas Granted and Reserved, 1912-13.* During the financial year 1912-13, the total area for which free grants were prepared was 2256 acres, including grants of 1698 acres of land resumed under the 12th clause of the Public Roads Act 1902. During the same period 1370 acres were dedicated and permanently reserved, the number of separate dedications being 89.

On the 30th June, 1913, the total area temporarily reserved was 27,372,752 acres, of which 6,249,364 acres were for travelling stock, 6,714,370 acres for forest reserves, 2,897,188 acres for water, 1,263,939 acres for mining, and the remainder for temporary commons, railways, recreation and parks, and miscellaneous purposes.

3. **Victoria.**—Under Section 10 of the Land Act 1901, the Governor is authorised to reserve Crown lands, either temporarily or permanently, from sale, lease or license, for any public purpose whatever.

During the year 1912 six free grants, comprising an area of 358 acres, were issued. During the same year reservations of both a permanent and temporary nature, comprising an area of 3686 acres, were made; of this area 392 acres were reserved for recreation grounds.

4. **Queensland.**—Under the Land Act 1910, the Governor-in-Council may grant in trust, or reserve from sale, or lease, temporarily or permanently, any Crown lands required for public purposes.

(i.) *Reservations.* Under Section 2 of the State Forests and National Parks Act 1906, the Governor-in-Council may permanently reserve any Crown lands and declare them to be a State Forest or a National Park.

(ii.) *Areas Granted and Reserved, 1912.* During the year 1912 there were sixty-two free grants issued for a total area of 283 acres. During the same period areas covering an area of 250,372 acres were reserved; 492,989 acres were reserved for timber, over and above areas cancelled, but the area of other reserves cancelled exceeded the area reserved by 242,617 acres, leaving a net area of 250,372 acres, and 44,198 acres for camping, water, and other purposes. The total area reserved up to the end of the year 1912 was 13,585,749 acres.

5. **South Australia.**—Under Section 7 (d) of the Crown Lands Act 1903, the Governor is empowered to dedicate by proclamation any Crown lands for various charitable, educational and public purposes, and may, at any time after dedication, grant the fee simple of such lands to secure the use thereof for the purpose for which they were dedicated.

(i.) *Reservations.* Under Section 7 (f) of the same Act the Governor may by proclamation reserve any Crown lands (a) for the use of aborigines, (b) for the purposes of military defence, (c) for forest or travelling stock reserves, (d) for public recreation grounds, (e) for railways or tramways, and (f) for park lands.

(ii.) *Artesian Leases.* Under special circumstances free leases of pastoral lands may be granted to discoverers of artesian wells.

(iii.) *Areas Granted and Reserved, 1912.* During the year 1912 there were 38 free grants issued for a total area of 173 acres. During the same year 106 reserves, comprising 13,975 acres, were proclaimed.

6. **Western Australia.**—Under Section 39 of the Land Act 1898, as amended by Section 27 of the Act of 1906, the Governor may reserve any Crown lands which may be required for religious, charitable, or public purposes. These reservations may be either temporary or permanent.

During the year 1912, 634 free grants totalling 2663 acres were issued, while the area reserved was 724,757 acres. Further particulars are not available.

7. **Tasmania.**—Under Section 11 of the Crown Lands Act 1911, the Governor may reserve any Crown lands for the purposes therein specified. The lands are ordinarily leased for a period of ninety-nine years at a peppercorn rental.

During the year 1912 there were 9 free leases, comprising an area of 3054 acres issued. During the same period 14,402 acres were reserved, 3000 acres being reserved for marine board purposes, 11,170 acres for re-afforestation purposes, 10 acres for recreation grounds, and 222 acres for other public reserves. The total area permanently reserved to the end of the year 1912 was 1,072,933 acres.

§ 5. Sales by Auction and Special Sales.

1. **Introduction.**—In all the States sales by auction of Crown lands are held from time to time. Notifications of such sales are given in the *Government Gazettes*, together with particulars as to the upset price and conditions of sale. Excepting in the case of South Australia, where land is sold at auction for cash only, the purchase may be either for cash or on credit by deferred payments. In most of the States land may also be purchased by private contract at the upset price, when it has been offered at auction and not sold. In the case of auction sales on credit in the States of Western Australia and Tasmania, certain improvement conditions are imposed, and such sales are therefore classed for the purposes of this article among *Conditional Purchases*. (See § 6.) In most of the States comparatively small areas of Crown lands may be sold without competition under special circumstances. Sales by auction and special sales under Closer Settlement Acts are referred to in a later part of this section. (See § 8.)

2. **New South Wales.**—Under the Crown Lands Act 1884 lands not exceeding in the aggregate 200,000 acres for the whole State may be sold by auction during any one year. The sales are notified in the *Gazette* not less than one month before the day of sale. The upset prices may not be less than £8 an acre for town lands; £2 10s. for suburban lands; and other lands fifteen shillings. Town lands may not be sold in areas exceeding half-an-acre; suburban lands in areas exceeding twenty acres; and country lands in areas exceeding 640 acres. A deposit of 25 per cent. on the purchase money must be paid at the sale, and the remainder within three months.

A fuller description of the conditions under which land may be purchased at auction may be found in the previous issues of the Year Book. (See Year Book No. 5, p. 273.)

Alienation by Auction and Special Sales. During the year ended the 30th June, 1913, the area of Crown lands sold by auction and special sales for which grants were prepared amounted to 7658 acres, of which 3852 acres were sold by auction in 1331 lots; 1181 acres were sold by after-auction sales in 809 lots; 55 acres were sold as improvement purchases in 149 lots; and 2570 acres were sold as special purchases in 312 lots. The following table gives particulars of Crown lands alienated by auction and special sales during 1901 and for each year from 1908 to 1913 :—

NEW SOUTH WALES.—AUCTION AND SPECIAL SALES, 1901 and 1908-13.

Year.	Auction and After-auction Sales.	Improvement Purchases.	Special Sales.	Total.	
				Area.	Price.
	Acres.	Acres.	Acres.	Acres.	£
1901 ¹ ...	49,074	43	445	49,562	116,562
1908 ...	13,995 ²	34	712	14,741	94,928
1909 ...	11,745 ²	48	1,229	13,022	98,763
1910 ...	7,980 ³	86	1,109	9,175	91,374
1911 ...	6,732 ⁴	47	1,348	8,127	86,601
1912 ...	4,530 ⁵	32	2,063	6,625	77,274
1913 ...	3,764 ⁶	53	2,739	6,556	58,552

1. Year ended 31st December. Subsequent years to 30th June. 2. Including land sold under the Centennial Park Sale Act. 3. Exclusive of 3423 feet frontage sold for £15,005 under the Centennial Park Sale Act. 4. Exclusive of 2347 feet frontage sold for £9175 under Centennial Park Sale Act. 5. Exclusive of 1882 feet frontage sold for £7554 under Centennial Park Sale Act. 6. Exclusive of 87 feet frontage sold for £391 under Centennial Park Sale Act.

Particulars of total areas alienated are given hereafter. (See § 11.)

3. **Victoria.**—Lands specially classed for sale by auction, and any land in any city, town, or borough, may be sold by auction in fee simple, not exceeding 100,000 acres in any one year, at an upset price of £1 an acre, or at any higher price determined. The purchaser must pay the survey charge at the time of the sale, together with a deposit of $12\frac{1}{2}$ per cent. of the whole price; the residue is payable in equal half-yearly instalments, not exceeding forty in number, according to the amount, with interest at the rate of 4 per cent. per annum.

(i.) *Special Sales without Competition.* Detached strips of land not exceeding twenty acres may be sold at a valuation to the owner of the adjoining freehold in cases somewhat similar to those specified above in respect to Crown lands in New South Wales.

(ii.) *Areas Sold at Auction and by Special Sales.* The following table gives particulars of auction sales and special sales for the year 1901 and from 1908 to 1912:—

VICTORIA.—AUCTION AND SPECIAL SALES, 1901 and 1908-12.

Particulars.				1901.	1908.	1909.	1910.	1911.	1912.
				Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Country lands	...	...	...	4,079	2,805	2,729	2,469	1,096	1,178
Town and suburban lands	...	...	...	2,127	1,630	2,062	1,789	1,268	1,412
Special sales	...	...	...	846	2,117	2,602	1,537	1,709	1,530
Total...				7,052	6,552	7,393	5,795	4,068	4,120

Particulars of total areas alienated are given hereafter. (See § 11.)

4. **Queensland.**—The Minister may, with the approval of the Governor-in-Council, cause any Crown lands to be offered for sale by auction. The notification must specify the amount of deposit, and the term for payment of the balance of the money, which term may not exceed ten years. The upset price may not be less than £8 per acre for town lands, £2 per acre for suburban lands, and 10s. per acre for country lands.

(i.) *After-auction Sales.* The notification of lands for sale by auction may declare that any lands therein mentioned, which have been offered at auction, but not sold or withdrawn, shall be open to purchase at the upset price by the first applicant. The price may be paid in the same instalments and at the same periods as if the land had been bought at the auction.

(ii.) *Special Sales without Competition.* Land may be sold without competition to the holder or holders of adjoining lands at a price to be determined by the Land Court, under circumstances similar to those specified above in the case of New South Wales. When the holder of any land proves that, owing to danger from floods or other reasons, it is unsafe to reside on his holding, he may be granted, on payment of a price determined by the Land Court, an area not exceeding ten acres out of the nearest convenient and available Crown lands.

(iii.) *Areas Sold at Auction, after Auction, and by Special Sales.* The following table shews the areas sold at or after auction, and by special sales, during the year 1901 and from 1908 to 1912:—

QUEENSLAND.—AUCTION AND SPECIAL SALES, 1901 and 1908-12.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Town	334	472	227	464	764	646
Suburban	793	621	340	1,175	1,462	1,015
Country—						
Ordinary sales	52,132	7,585	12,844	8,939	7,897	4,733
Total	53,259	8,678	13,411	10,578	10,123	6,394

Particulars of total areas alienated are given hereafter. (See § 11.)

(iv.) *Unconditional Selections.* This form of tenure is similar to that of a sale by auction with deferred payment. The minimum price for the land is 13s. 4d. an acre, payable in twenty annual instalments, and the maximum area granted to the applicant is 1280 acres. A deed of grant may be obtained upon payment of the purchase money.

The following table shews the number and area of unconditional selections for which applications were accepted during the year 1901 and from 1908 to 1912:—

QUEENSLAND.—UNCONDITIONAL SELECTIONS, 1901 and 1908-1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
Number	151	126	131	98	76	51
Area Acres	24,322	22,770	27,395	15,930	12,968	14,578
Rent £	1,180	1,073	1,111	685	525	565

5. **South Australia.**—The following lands may be sold by auction for cash:—(a) *Special blocks.* Any single section of Crown lands which may be surrounded by lands sold or contracted to be sold, and any section (not exceeding 100 acres in area) which may be required for the establishment of any industry. (b) *Crown lands* which have been offered for perpetual lease, and not taken up for two years. (c) *Town lands.* (d) *Suburban lands.* The upset price is determined by the Commissioner, and 20 per cent. of the purchase-money must be deposited at the time of sale, and the residue paid within such a time as the Commissioner may allow.

(i.) *After-auction Sales.* All Crown lands, except town or suburban lands, offered at auction and not sold remain open for leasing or sale under agreement or may be sold by private contract for cash at the upset price.

(ii.) *Sales for Special Purposes.* The Governor may, on the application of the purchaser or lessee under any of the Crown Lands Acts, grant 2 acres of the land comprised in such agreement or lease to trustees, to be used for any public or charitable purposes, or he may grant not over one acre of land, comprised in such agreement, as a site for a shop, mill, or post office. The purchase-money for such land must be paid at the time of application.

(iii.) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1908 to 1912. The total areas sold under all types of sale are shewn in a later part of this section. (See § 11.)

SOUTH AUSTRALIA.—AUCTION AND SPECIAL SALES, 1901 and 1908-1912.

Year	...	...	...	1901.	1908.	1909.	1910.	1911.	1912.
Area in acres	...	...	...	11,314	78,557	128,529	386,977	470,003	277,665

6. **Western Australia.**—Surveyed town lots notified in the *Gazette* as open for sale, were sold by public auction at a prescribed upset price up to 18th October, 1911, since which date, however, all town lands have been withdrawn from sale and are now granted under lease only. In the case of suburban lands, the purchaser must carry out certain improvements, which are more particularly referred to below. (See § 6, *Conditional Purchases*.)

(i.) *Areas Sold by Auction.* The following table shews the areas of town and suburban lands sold at auction during the year 1901 and from 1908 to 1913:—

WESTERN AUSTRALIA.—AUCTION SALES, 1901 and 1908-1913.

Year	...	...	...	1901.	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹	1913. ¹
Area sold	...	...	Acres	856	2,258	2,160	1,643	1,848	1,359	1,087
Number of Allotments	...	...	...	1,366	1,090	879	783	778	705	530

1. For the year ended 30th June.

Particulars as to total areas alienated are given in a later part of this section. (See § 11.)

7. **Tasmania.**—Any town lands may be sold at auction or by private contract, either for cash or on credit, provided that no such lands may be sold on credit if the price is less than £15. Rural lands may also be sold at auction or by private contract, but lots of first-class land may not be sold on credit if less than fifteen acres in area. In the case of sales on credit both of town and rural lands, improvement conditions are imposed, and such sales are therefore classified for the purposes of this article as *Conditional Purchases*. (See § 6.)

(i.) *After-auction Sales.* All rural lands and town lands, not within five miles of any city, which have been offered at auction and not sold, may be purchased by private contract at the upset price, and subject to the conditions on which they were offered at auction.

(ii.) *Sale of Land in Mining Towns.* The holder of a residence or business license, who is in occupation and is the owner of buildings and improvements upon the area licensed of a value equal to the upset price of such area, is entitled to purchase not more than half an acre in area. The areas may be sold on credit.

(iii.) *Areas Sold for Cash.* The following table shews the areas sold for cash during the year 1901 and from 1908 to 1912:—

TASMANIA.—AUCTION AND SPECIAL SALES, 1901 and 1908-1912.

Year	...	...	...	...	1901.	1908.	1909.	1910.	1911.	1912.
Area in acres	...	...	...	...	1,915	603	1,026	55	190	2,026

Particulars of total areas alienated are given in a later part of this section. (See § 11.)

§ 6. Conditional Purchases.

1. Introduction.—In all the States of the Commonwealth the freehold of the land may be acquired under what are known as systems of conditional purchase by deferred payments of half-yearly or yearly instalments. Certain conditions, generally as to residence and improvements, have to be complied with before the freehold is granted, but these conditions are usually of a light nature and are inserted chiefly with the object of guaranteeing that the occupier will become of benefit to the community by making a reasonable effort to render his holding wealth-producing. Though there is a considerable similarity between some of the forms of tenure in the several States, the terms and conditions vary greatly in detail. As a rule a lease or license for a certain period is first issued to the selector, and upon fulfilment of the prescribed conditions and payment of the full amount of purchase-money the freehold is conveyed to him. In Queensland and Western Australia "free" homesteads may be acquired. Although under these tenures no purchase-money is payable, the grant is conditional on the performance of residential and improvement conditions; these tenures are therefore included here with conditional purchases rather than with free grants.

2. New South Wales.—The following are the methods by which land may be alienated by conditional purchase:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conversion of conditional purchase; and (iv.) homestead selections.

A description of the conditions under which land may be taken up under this form of tenure is given in previous issues of the Year Book. (See No. 6, p. 277.)

During the year ended the 30th June, 1913, deeds of grant were prepared on the completion of conditional purchases for 406,019 acres, making the total number of conditional purchases in existence at the end of the financial year 92,183 for a total area of 17,805,305 acres. The following table gives particulars of conditional purchases in 1901 and from 1908 to 1913:—

NEW SOUTH WALES.—CONDITIONAL PURCHASES, 1901 and 1908 to 1913.

Year.	Applications Made.		Applications Confirmed.		Areas for which Deeds have been Issued.	
	Number.	Area.	Number.	Area.	During the Year. ¹	To end of Year.
		Acres.		Acres.	Acres.	Acres.
1901	2,277	549,898	1,555	360,910	500,554	4,212,189
1908 ¹	3,850	784,125	2,961	580,209	1,395,648	11,659,869
1909 ¹	4,541	1,105,307	3,325	803,354	1,188,297	12,848,166
1910 ¹	2,264	342,367	1,984	294,897	1,079,887	13,928,053
1911 ¹	1,602	221,537	1,613	227,520	632,738	15,614,036
1912 ¹	1,258	190,969	1,099	175,004	671,564	15,232,355
1913 ¹	783	103,844	839	105,167	406,019	15,638,374

1. Year ended 30th June.

2. Exclusive of exchanges under the Crown Lands Act 1895.

Further particulars as to the total areas alienated and in process of alienation are given hereinafter. (See § 11.)

During the year ended 30th June, 1913, there were 25 original and 40 additional homestead selections applied for, comprising an area of 19,595 acres. During the same period the total number of applications confirmed was 106, comprising 30,879 acres, and 4701 homestead selections and grants, comprising an area of 1,480,834 acres, were in existence on the 30th June, 1913. Further particulars for previous years are given in a later part of this section. (See § 11.)

3. **Victoria.**—The freehold of agricultural and grazing lands may be acquired by conditional purchase under the following tenures:—(i.) Agricultural allotments and grazing allotments; (ii.) Agricultural and grazing allotments by selection from grazing area or perpetual leases; (iii.) Mallee agricultural licenses; (iv.) Murray settlements leases; and (v.) swamp or reclaimed lands purchase leases.

A description of the conditions under which land may be taken up under this form of tenure may be found in previous issues of the Year Book. (See No. 6, p. 278.)

With reference to Murray settlement leases, two settlement areas have been laid out under the Act with due regard to irrigation conditions, viz., those at White Cliffs and Nyah, and at the former place a dry farm area has also been subdivided. At White Cliffs 6273 acres were subdivided as homestead allotments, and 50,345 acres as dry farm allotments, while at Nyah 1960 acres were subdivided as homestead allotments. No additional subdivision has been made during 1912.

The subjoined table gives particulars shewing the areas selected conditionally during the year 1901 and from 1908 to 1912. A large proportion of the areas shewn has reverted to the Crown in consequence of non-fulfilment of conditions.

VICTORIA.—AREAS PURCHASED CONDITIONALLY, 1901 and 1908 to 1912.

Particulars.			1901.	1908.	1909.	1910.	1911.	1912.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
With residence	...	...	466,155	184,942	214,999	210,331	172,599	97,766
Without residence	...	...	50,257	28,941	42,180	38,363	33,109	16,864
Total	...	...	516,412	213,883	257,179	248,694	205,708	114,630
No. of selectors	...	...	2,979	1,533	1,736	1,740	1,608	1,072

Particulars as to total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

4. **Queensland.**—The several types of selection under which the freehold may be acquired by conditional purchase are as follows:—(i.) Agricultural farms; (ii.) agricultural homesteads; (iii.) prickly pear selections; and (iv.) free homesteads.

In previous issues of this book may be found the conditions under which land may be selected under this form of tenure. (See No. 6, p. 280.)

Number and Area of Conditional Purchases. The following table shews the number and area of conditional purchases for which applications were accepted in 1901 and from 1908 to 1912:—

QUEENSLAND.—CONDITIONAL PURCHASES (APPLICATIONS ACCEPTED).

1901 AND 1908 TO 1912.

Year.		Agricultural Farms.		Agricultural Homesteads.		Prickly Pear Selections.		Total.	
		Number.	Area.	Number.	Area.	Number.	Area.	Number.	Area.
			Acres.		Acres.		Acres.		Acres.
1901	...	661	160,804	669	155,512	19	48,450	1,349	364,766
1908	...	1,608	607,164	229	55,152	714	870,849	2,551	1,533,165
1909	...	1,433	541,293	162	39,654	496	665,614	2,091	1,246,561
1910	...	1,733	628,222	67	14,778	920	1,308,170	2,720	1,951,170
1911	...	2,046	714,733	30	5,814	806	1,020,615	2,882	1,741,162
1912	...	1,717	614,269	18	3,771	544	628,614	2,279	1,246,654

During the year 1912, applications were accepted to select agricultural farms to the number of 1717 for 614,269 acres, an average area of 358 acres, at an average price of 19s. 1d. per acre. The number of selections and the total area selected were higher than the corresponding figures for the previous year by 329 and 100,464 acres, respectively. The average area is greater by 9 acres, and the average price lower by 1s. 9d. per acre.

The average area of agricultural homesteads was 209½ acres. The average price of the land selected as prickly pear selections during the year was 4s. 6½d. per acre.

During the year 1912 the number of acres of land opened for selection as free homesteads was 479, and 3 applications, totalling 480 acres, were accepted.

Particulars as to total areas alienated and in process of alienation may be found hereinafter. (See § 11.)

5. South Australia.—The types of conditional purchases under which land may be alienated in this State are as follows :—(i.) Agreement to purchase, and (ii.) Agreement under the Pinnaroo Railway Act 1903.

(i.) *Agreement to Purchase.*—Surveyed Crown lands are available for agreement to purchase, as well as for perpetual lease under the Crown Lands Acts of 1903 to 1912, the purchase-money being fixed by the Land Board, and payable in sixty half-yearly payments, including interest at not less than 2 per cent. per annum. The condition as to payment of instalments for land offered under the provisions of Act of 1912 in newly surveyed mallee lands is that no payment is made for the first four years, for the fifth and sixth years interest only at the rate of 2 per cent. per annum on value of land is payable, the first instalment of purchase-money, including interest at the rate of 4 per cent. per annum, being payable at the commencement of the seventh year. All payments are made in advance, the term of agreement being thereby extended to thirty-six years. If the conditions relating to fencing, vermin destruction, and in some cases to residence, are fulfilled, the purchase may be completed after a term of six years from commencement of the agreement on payment of all principal and interest due. All minerals are reserved to the Crown, and the Crown may resume any part of the land for the purposes of roads, water conservation, mining, etc., compensation being payable to the purchaser for loss occasioned by resumption.

(ii.) *Pinnaroo Railway Lands.* Under the Pinnaroo Railway Act 1903 provision was made for opening up about 1,500,000 acres of good agricultural country in the vicinity of a line from Pinnaroo adjoining the Victorian border to Tailem Bend, a distance of eighty-seven miles. These lands are now offered on agreement with covenant to purchase or on perpetual lease under the Crown Lands Act 1903. The railway has been paid for from the proceeds of the land already selected. The conditions of purchase are similar to those stated in par. (i.) above.

The total area held on 30th June, 1913, was 570,583 acres ; of this area 16,984 acres are held on perpetual and right of purchase leases, allotted before the Pinnaroo Railway Act was passed.

(iii.) *Particulars of Conditional Purchases.* The subjoined table gives particulars of the areas alienated by conditional purchase, on fulfilment of the conditions, at the end of 1901 and from 1908 to 1912 :—

SOUTH AUSTRALIA.—AREAS ALIENATED UNDER AGREEMENTS TO PURCHASE,

1901 AND 1908 TO 1912.

Year	...	...	...	1901	1908.	1909.	1910.	1911.	1912.
Area in acres	...	...	...	57,460	68,977	128,656	160,668	153,594	51,702

Particulars as to the total areas alienated and in process of alienation are given in a later part of this section. (See § 11.)

6. Western Australia.—The various types of selection under which the freehold can be alienated by conditional purchase in this State are as follows:—(i.) Residential conditional purchase; (ii.) non-residential conditional purchase; (iii.) conditional purchase by direct payment; (iv.) conditional purchase of blocks for vineyards, orchards, or gardens; (v.) conditional purchase of grazing lands; and (vi.) free homestead farms.

A full description of the various conditions under which land may be held under this form of tenure may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 283 and 284.) The following table shews the area of the selections for which grants were issued, the prescribed conditions having been fulfilled, during the year 1901 and from 1908 to 1913.

WESTERN AUSTRALIA.—AREAS SELECTED CONDITIONALLY FOR WHICH CROWN GRANTS WERE ISSUED, 1901 and 1908-13.

Particulars.	1901.	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹	1913. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Free homestead farms	147	16,122	18,482	35,334	93,444	83,686	96,435
Conditional purchases	5,234	138,812	61,272	64,957	92,986	97,286	113,885
Poison land leases ...	...	130,729	2,668	3,284	...	2,593	6,232
Total ...	5,381	285,663	82,422	103,575	186,430	183,565	216,552
Number of holdings	48	437	475	564	1,073	998	1,232

1. For financial year ended 30th June.

Particulars as to the total areas alienated absolutely, and in process of alienation, are given in a later part of this section. (See § 11.)

Area Conditionally Alienated. The following table shews the areas conditionally alienated under various methods of selection during the year 1901 and from 1908 to 1913:—

WESTERN AUSTRALIA.—AREAS CONDITIONALLY ALIENATED, 1901 and 1908-13.

Particulars.	1901.	1908.*	1909.*	1910.*	1911.*	1912.*	1913.*
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Conditional Purchase—</i>							
Deferred payments (with residence)	161,302	447,159	595,115	910,933	899,816	791,844	510,195
" (without residence)	46,498	199,584	265,561	475,860	574,805	391,397	149,648
Direct payments (without residence)	1,909	2,645	1,762	3,641	2,458	5,661	3,548
<i>Village Allotments</i> ...	...	3	...	...	...	...	...
<i>Free Homestead Farms</i> ...	63,623	189,086	257,528	238,102	201,172	203,791	151,965
<i>Under the Agric. Lands Purchase Acts</i>	4,205	8,201	35,599	23,787	49,993	8,375	10,835
<i>Homestead or Grazing Leases</i> ...	64,834	295,696	850,066	238,876	194,839	568,958	585,392
<i>Poison Land Leases</i> ¹ ...	9,530	...	...	...	...	...	...
<i>Workingmen's Blocks</i> ² ...	8	131	189	148	99	56	4
Total ...	351,999	1,142,505	2,005,820	1,891,367	1,923,172	1,970,082	1,411,597
Number of holdings ...	1,888	4,362	5,861	5,403	4,265	4,871	3,771

* For year ended 30th June. 1. Provisions repealed by Act of 1906.

2. Closer settlement. (See § 8, 7.)

Particulars as to the total areas in process of alienation are given in a later part of this section. (See § 11.)

7. Tasmania.—The various types of conditional purchases in this State are as follows:—(i.) Selection of rural land; (ii.) homestead areas; (iii.) selection in mining

areas; and (iv.) sales by auction on credit, either of town or rural lands. The conditions under which land may be selected under this form of tenure are given in previous issues of the Year Book. (See No. 6, p. 283.)

The following table shews the areas alienated absolutely under systems of conditional purchases and sales on credit, the conditions having been fulfilled, and also shews the areas sold conditionally and the applications for conditional purchases received and confirmed, during the year 1901 and from 1908 to 1912:—

TASMANIA.—CONDITIONAL PURCHASES, 1901 and 1908 to 1912.

Particulars.		1901.	1908.	1909.	1910.	1911.	1912.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Completion of Conditional Purchases</i> ¹	... ..	23,781	42,362	41,942	42,276	33,055	39,844
<i>Sold Conditionally—</i>							
Free Selections		40,004	120,420	183,237	145,651	211,447	91,513
Homestead Areas		9,108	2,037	971	364	274	199
Auction Sales on Credit		12,961	2,740	4,988	4,365	2,437	2,026
Other Sales (Town Lands)		636	1,632	2,400	2,380	1,493	1,915
Total...	... ..	62,709	126,829	191,596	152,760	215,651	96,653
<i>Applications—</i>							
Received		1,444	3,225	2,929	3,171	2,136	1,800
Confirmed		768	1,249	1,501	1,180	1,241	652

1. Including selections and sales on credit.

Particulars of total areas alienated and in process of alienation are given hereinafter. (See § 11.)

§ 7. Leases and Licenses.

1. Introduction.—Leases and licenses are issued in all the States and in the Northern Territory for various terms and upon various conditions. In Victoria, Queensland, South Australia, and the Northern Territory perpetual leases are issued for an indefinitely long period upon payment of an annual rent; while in all the States leases or licenses of comparatively large areas may be obtained for pastoral purposes. Provision has also been made in all the States for convenient forms of leases and licenses for various special purposes, and also for special classes of lands. The leases and licenses dealt with below are exclusive of those issued under Closer Settlement and kindred Acts, and also of those issued for mining and auxiliary purposes. (See §§ 8 and 9.)

2. New South Wales.—The following are the various types of leases and licenses issued in this State:—(i.) Conditional leases; (ii.) conditional purchase leases; (iii.) settlement leases; (iv.) improvement leases; (v.) annual leases; (vi.) residential leases; (vii.) special leases; (viii.) snow leases; (ix.) pastoral leases; (x.) scrub leases; (xi.) inferior lands leases; (xii.) occupation licenses; (xiii.) Western lands leases; (xiv.) homestead farm leases; (xv.) suburban holdings leases; (xvi.) Crown leases; (xvii.) irrigation farm leases.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in previous editions of the Year Book. (See Year Book No. 6, p. 285.)

On the 30th June, 1913, there were 60,242 leases and licenses current under the Lands Department and the Western Land Board, comprising 124,361,637 acres of Crown Lands. Of these leases there were 38,972, comprising 19,483,197 acres, in the Eastern Division; 18,254, comprising 28,379,049 acres, in the Central; and 3,016, comprising 76,499,391 acres, in the Western Division.

The following table shews the areas held under various descriptions of leases and licenses at the end of the year 1901, and at the end of the financial years 1909-10, 1910-11, and 1911-12, and also the area and rental of leases current on the 30th June, 1913:—

NEW SOUTH WALES.—AREAS OCCUPIED UNDER LEASES AND LICENSES,

1901 AND 1909-1913.

Leases and Licenses.	1901.	1909-10.	1910-11.	1911-12.	1912-13.	
					Area.	Rent.
	Acres.	Acres.	Acres.	Acres.	Acres.	£
Pastoral	44,805,221	1,137,095	1,137,095	1,137,095	1,137,095	734
Outgoing pastoral lessees ...	—	1,136,141	1,096,327	1,098,981	996,272	9,838
Western land leases & licenses	—	73,912,534	74,327,246	74,838,648	74,368,024 ¹	89,702
Occupation (i.) Ordinary	25,812,215	7,464,823	6,821,352	6,553,241	6,401,989	11,896
licenses (ii.) Preferential	12,985,651	2,529,484	2,177,318	2,046,163	1,703,260	9,960
Homestead leases ...	10,953,388	636,440	593,628	489,788	480,210	1,035
Condit'l. leases—(i.) Gazetted	13,014,055	15,581,163	15,227,269	15,670,320	15,987,366	195,921
(ii.) Not gazetted (under provisional rent)	966,887	741,802	1,073,586	490,507	202,155	1,785
Conditional purchase leases...	—	669,795	675,961	632,515	611,152	17,687
Settlement leases ...	3,468,675	7,569,925	7,782,720	7,829,712	7,256,701	87,000
Improvement	5,551,060	6,884,330	6,430,605	6,418,260	6,014,906	51,139
Annual	6,755,942	5,405,694	4,065,280	4,262,980	4,237,898	29,872
Scrub	1,535,415	2,234,314	2,255,758	2,273,123	2,211,234	8,752
Snow land	79,582	71,730	63,864	60,104	60,104	451
Special	124,877	496,759	563,378	596,179	620,447	32,820
Inferior land	288,590	106,562	128,711	129,651	108,664	361
Artesian well	358,071	92,160	92,160	71,680	71,680	143
Blockholders'	—	1	1	1	1	6
Residential leases (ongold and mineral fields) ...	5,751	13,387	13,383	13,637	13,427	1,601
Church and school lands ...	97,207	25,188	14,014	9,720	6,855	457
Permissive occupancies ² ...	118,634	979,667	919,652	949,941	1,002,794	7,461
Prickly pear leases	—	66,789	62,157	57,691	62,687	1,023
Crown lease	—	—	—	168,392	555,864	5,621
Homestead farms	—	—	—	27,815	241,221	9,829
Suburban holdings	—	—	—	1,065	9,731	1,146
Total under Lands Dept. and Western Land Board	126,921,161	127,755,783	125,551,465	125,827,179	124,361,737	576,240

1. Includes 831,100 acres held under Permissive Occupancy at a rental of £416.
2. Permissive Occupancies in the Western Division not included.

The total annual rent derived from the leases and licenses issued by the Lands Department and the Western Lands Board amounted to £576,240, or an average of 1.112 pence per acre. Particulars regarding leases and licenses issued by the Mines Department are given in a later part of this section. (See § 9, *Occupation of Crown Lands for Mining Purposes*.)

3. Victoria.—The various types of leases and licenses (exclusive of Closer Settlement and Mines Department leases and licenses) which may be issued in this State are as follows:—(i.) Grazing area leases; (ii.) perpetual leases; (iii.) Mallee perpetual leases; (iv.) licenses of auriferous lands; (v.) swamp or reclaimed lands leases; (vi.) grazing licenses and pastoral leases; (vii.) leases and licenses for other than pastoral purposes; and (viii.) State forests and timber reserves licenses.

A description in detail of the conditions which govern the issue of these various leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 291-2.)

Areas held under Leases and Licenses. The following statement shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901, and from 1908 to 1912.

**VICTORIA.—OCCUPATIONS OF CROWN LANDS UNDER LEASE OR LICENSE,
1901 AND 1908-12.**

Tenure.	Area in Acres.					
	1901.	1908. ^a	1909.	1910.	1911.	1912.
Pastoral Leases	89,450	63,510	51,450	14,200	—	—
Grazing Area Leases... ..	2,338,649	3,183,800	3,087,173	3,006,998	2,950,226	2,869,095
Grazing Licenses—						
Land Acts 1890-91	5,908,965	—	—	—	—	—
Land Acts 1901 (exclus. of Mallee)	—	6,469,855	6,774,794	5,763,489	5,328,249	5,777,386
Mallee Lands	—	4,467,218	4,970,042	5,273,592	5,413,216	5,016,456
Auriferous Lands (Licenses)... ..	377,427	106,040	103,996	101,623	99,008	92,873
Swamp Lands (Leases)	4,200	4,566	4,580	4,038	4,001	3,961
Perpetual Leases	8,137	31,952	32,354	22,159	9,950	7,899
Mallee Pastoral Leases	—	—	—	—	—	—
Mallee Allotment Leases	7,980,592	987,186	718,249	637,083	327,149	114,287
Perpetual Leases under Mallee Lands	—	—	—	—	—	—
Acts 1896-1901	448,842	641,219	641,837	610,693	587,350	561,214
Wattles Act 1890	4,427	—	—	—	—	—
Total	17,110,709	15,955,346	16,384,395	15,433,875	14,719,149	14,443,191

4. **Queensland.**—In this State Crown lands may be occupied under the following types of leases and licenses:—(i.) Grazing homesteads; (ii.) grazing farms; (iii.) occupation licenses; (iv.) special leases; (v.) perpetual lease selections; and (vi.) pastoral leases. An applicant for a grazing homestead or grazing farm may not hold more than 6000 acres, and the term of the lease may not exceed 28 years. General conditions as to applications for selections have been mentioned above. (See § 6, 4.)

(i.) *Grazing Homesteads.* Lands opened for grazing selections are available for fifty-six days as grazing homesteads only. Personal residence is necessary for the first 5 years, and prior to the expiration of such period or the earlier death of the lessee, a grazing homestead can not be assigned or transferred. Without the special permission of the Minister it may not be mortgaged during the five years except to the Agricultural Bank; thereafter the lease is subject to the condition of occupation.

(ii.) *Grazing Farms.* In order to obtain priority of claim the applicant may tender an annual rent higher than the notified one, for the first seven years. As soon as the land is fenced the selector becomes entitled to a lease, and may thereafter mortgage the same. The lease is subject to the condition of occupation during the whole term. The Crown may resume the whole or part of the lease.

Particulars of grazing farms and grazing homesteads are given in the following paragraph:—

(iii.) *Grazing Farms, Homestead and Scrub Selections.* The following table shews the number of grazing farms, grazing homesteads, and scrub selections, for which applications were accepted in 1901 and from 1908 to 1912:—

**QUEENSLAND.—GRAZING FARMS, HOMESTEAD AND SCRUB SELECTIONS,
1901 AND 1908-12.**

Year.	Grazing Farms.		Grazing Homesteads		Scrub Selections.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.		Acres.
1901 ...	247	1,371,283	47	290,785	19	48,450	313	1,710,518
1908 ...	314	2,459,653	91	870,325	4	16,401	409	3,346,379
1909 ...	304	3,114,593	116	1,509,210	2	8,489	422	4,632,292
1910 ...	182	1,406,087	243	2,477,743	1 ¹	5,324	426	3,889,154
1911 ...	161	1,762,406	253	2,726,306	...	...	414	4,488,712
1912 ...	223	1,884,920	348	3,860,887	...	...	571	5,695,807

1. The Land Act 1910, makes no provision for the further selection of land as scrub selections.

The average rent in 1912 was $1\frac{1}{8}$ d. per acre for grazing farms and $1\frac{1}{2}$ d. per acre for grazing homesteads.

Particulars of total areas held under leases and licenses are given in a later part of this section. (See § 11.)

(iv.) *Occupation Licenses.* Annual licenses are granted to occupy Crown lands which have been declared open for such occupation by notification in the *Gazette*. The rent is as specified by the notification or as bid by the licensee, but the Minister may by notice before the 1st September in any year increase the rent. The total number of licenses in force at the end of the year 1912 was 1985, comprising an area of 66,352 square miles, the total rent being £44,170. Particulars of the area held under license for previous years are given in a later part of this section. (See § 11.)

(v.) *Special Leases.* Leases of any portion of land may be issued for a term not exceeding thirty years to any person for any manufacturing, industrial, business or recreation purposes. Leases for a similar term may be issued for any country lands reserved for public purposes and which are infested with noxious weeds.

During the year 1912 there were 88 leases for special purposes granted, comprising an area of 9968 acres, the total annual rent being £598, and there were extant at the end of the year 542 such leases, reserving rents amounting to £3160 per annum. In addition, 31 leases of reserves, aggregating 11,176 acres, were granted at rentals amounting to £142 per annum; the total number of these leases of reserves in force at the end of the year being 156, reserving rents amounting to £644. Particulars of special leases for previous years are given in a later part of this section. (See § 11.)

(vi.) *Perpetual Lease Selections.* Land proclaimed to be open for agricultural farm selection (see § 6, 4) may also be opened for perpetual lease selection, and the latter mode may be conceded priority of application over the former. The rent for the first period of ten years of the lease is $1\frac{1}{2}$ per cent. on the proclaimed purchase price of the land for agricultural farm selection. The rent for each succeeding period of ten years is determined by the Land Court. Similar conditions of occupation and improvement as are prescribed for agricultural farms are attached to perpetual lease selections.

(vii.) *Special Licenses.* Licenses to cut timber or to dig for any stone, gravel, earth, shells, or guano, may be issued.

(viii.) *Pastoral Leases.* Existing pastoral leases are now deemed to be held under the Land Act 1910. Lands open for pastoral lease may be leased for a period not exceeding thirty years. The annual rent, per square mile, for the first ten years must be as notified in the *Gazette*, or in case of competition, bid at auction. If the value of the holding become enhanced by the development of public works in the neighbourhood, or by the occurrence of minerals on or near the holding, the rent may be redetermined.

The following table shews the total areas of pastoral leases (including resumed parts) occupied under the various Acts at the end of the year 1901 and from 1908 to 1912, inclusive:—

QUEENSLAND.—PASTORAL LEASES OCCUPIED UNDER VARIOUS ACTS,

1901 AND 1908-1912.

Particulars.	Area in Square Miles.					
	1901.	1908.	1909.	1910.	1911.	1912.
Pastoral Leases Act 1869	39,307	1,513	1,379	890	...	...
Crown Lands Act 1884	243,586	26,842	18,733	11,710	...	...
Land Act 1897	15,046	3,686	1,307	86	...	...
Pastoral Leases Act 1900	50,076	24,061	24,061	21,739	...	...
Pastoral Holdings New Leases Act 1901	—	349	347	500	...	...
Land Act 1902	—	258,975	280,960	305,924	...	...
Land Act 1910	—	—	—	—	346,637	354,843
Total	348,015	315,426	326,787	340,849	346,637	354,843

The gross area held at the end of the year 1912 for purely pastoral purposes (under *Occupation Licenses and Pastoral Leases*) was 421,195 square miles, at rentals aggregating £346,973 per annum. The area was 6622 square miles greater than that for the previous year, and the rental was £9372 greater. The average rent was 16s. 5½d. per square mile, as against 16s. 3½d. for the previous year.

5. **South Australia.**—The following are the various types of leases and licenses which are issued in this State:—(i.) Perpetual leases; (ii.) miscellaneous leases; (iii.) miscellaneous grazing and cultivation leases; (iv.) irrigation and reclaimed swamp leases; (v.) licenses for special purposes; (vi.) leases under the Pastoral Act 1904; and (vii.) leases with right of purchase.

(i.) *Perpetual Leases.* Surveyed Crown lands are available for perpetual leases as well as for agreements to purchase under Crown Lands Acts of 1903 to 1912. Under the Crown Lands Act of 1888 perpetual leases were granted in perpetuity, and the rent determined for each period of fourteen years, at least twelve months before the expiration of each such period. Under the Crown Lands Act of 1893 the revaluation section was repealed and the rent was fixed in perpetuity, generally at rates varying from 2 per cent. to 4 per cent. per annum on the value of the land as fixed by the Land Board. The condition as to payment of rent of land offered under provisions of the Act of 1912 in newly surveyed mallee lands is that no rent is charged for the first four years, for the fifth and sixth years payment is made at the rate of 2 per cent. per annum, the full rate at 4 per cent. becoming due at the commencement of the seventh year. All minerals are reserved to the Crown, and the Crown may reserve any part of the land for the purposes of roads, water conservation, mining, etc., compensation being payable to the lessee for loss occasioned by resumption.

The conditions under which the other leases and licenses are issued will be found in detail in the previous issues of the Year Book. (See Year Book No. 5, pp. 294 and 295.)

Area held under Lease. The following table shews the area held under leases and licenses at the end of the year 1901, and from 1908 to 1912:—

SOUTH AUSTRALIA.—AREA UNDER LEASES AND LICENSES, 1901 and 1908 to 1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	5,639,519	4,424,514	4,232,009	3,697,423	3,150,533	2,836,346
Perpetual Leases ...	7,115,782	13,289,290	14,088,223	14,789,305	15,020,544	15,070,607
Pastoral Leases ...	68,916,125	83,009,650	87,038,450	91,434,450	91,546,770	96,356,850
Other Leases ...	3,905,729	1,812,959	1,513,032	1,394,964	1,283,663	1,273,350
Total held under Lease ...	85,577,155	102,516,713	106,871,714	111,316,142	111,001,510	115,537,153

6. **Western Australia.**—The following are the various types of leases and licenses issued in this State:—(i.) Pastoral leases; (ii.) permits and licenses to cut timber; (iii.) special leases; and (iv.) licenses for quarrying.

The conditions of tenure with respect to these leases and licenses may be found in the previous issues of the Year Book. (See Year Book No. 5, pp. 296-7.)

Areas Held under Leases and Licenses. The following table shews the number and area of leases and licenses issued during the year 1901, and from 1908 to 1913:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED, 1901 and 1908 to 1913.

Particulars.	1901.	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹	1913. ¹
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Pastoral Leases ...	19,909,251	16,161,172	9,787,020	10,130,358	9,057,002	11,245,895	18,135,488
Special Leases ...	149	71,900	12,498	6,212	3,112	6,760	3,993
Leases in Reserves ...	324	152,050	31,376	327,020	174,107	188,444	2,901,238
Timber Leases and Permits ²	109,630	30,433	38,500	236,970	68,430	119,000	129,317
Residential Lots ...	221	1	3	6	4	18	2
Total ...	20,019,575	16,415,556	9,869,397	10,700,566	9,302,655	11,560,117	21,170,038
Number Issued ...	1,466	870	480	505	396	487	1,918

1. For financial year ended the 30th June. 2. No timber leases granted since 1903.

Particulars as to the total area occupied under leases and licenses are given in a later part of this section. (See § 11.)

7. Tasmania.—The several forms of leases and licenses in this State are as follows:—(i.) Grazing leases; (ii.) miscellaneous leases; (iii.) timber licenses; (iv.) occupation licenses; (v.) temporary licenses; and (vi.) timber leases.

The conditions which govern the issue of these leases and licenses are more fully dealt with in the previous issues of the Year Book. (See Year Book No. 5, p. 297).

Area held under Leases and Licenses. The following table shews the areas of Crown lands occupied under leases and licenses at the end of the year 1901 and from 1908 to 1912:—

TASMANIA.—LEASES AND LICENSES, 1901 and 1908-1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ordinary Leased Land ...	1,280,688	1,235,823	1,173,823	1,176,900	1,242,400	1,245,400
Islands ...	149,165	103,130	90,100	87,100	62,000	135,025
Land Leased for Timber ...	40,768	91,972	100,098	108,889	134,516	136,471
Total ...	1,470,621	1,430,925	1,364,021	1,372,889	1,438,916	1,516,896

8. Northern Territory.—The system of land settlement in the Northern Territory is being reorganised by the Commonwealth Government. A new Lands Ordinance was passed in December, 1912, known as the Crown Lands Ordinance 1912, and future disposal of land in the Territory will be made in accordance with this Ordinance, which provides for a leasehold system only, and no further alienation of Crown lands will be permitted, unless such alienation is in pursuance of existing agreements. Under this Ordinance, the classification and control of Crown lands is in the hands of a Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor. The classified land is leased in blocks, the maximum area ranging from 300 square miles of first-class pastoral to 1280 acres of first-class agricultural land. Before offering any land for leasing, the Board fixes the annual rental, but every lease is subject to reappraisal of rent at specified periods, viz., every fourteen years in the case of town lands, and every twenty-one years in the case of agricultural and pastoral lands.

Leases under this Ordinance are in perpetuity, except as regards pastoral and miscellaneous leases, the term of which is 21 or 42 years, according to the quality of the land leased.

The lessee must reside on the land leased for a certain period every year, must fence, stock, and cultivate it to the extent prescribed, and must, within two years of the commencement of the lease, establish a home on it. In order to promote settlement in

the Territory, the first five thousand blocks of agricultural land taken up on perpetual lease under this ordinance will be rent free during the life of the applicant, or for 21 years from the commencement of the lease, whichever period is longer.

The various types of leases, licenses, and permits current are as follows:—(i.) Agricultural leases; (ii.) pastoral leases; (iii.) special leases; (iv.) leases with right of purchase; (v.) tropical products leases; (vi.) leases for horsebreeding stations; (vii.) licenses; and (viii.) pastoral and other permits. (See § 2, 7). The permit system was discontinued at the end of 1911.

Area held under Lease, License, and Permit. The following table shews the total area held under lease, license, and permit at the end of the year 1901 and 1908 to 1912:—

**NORTHERN TERRITORY.—AREA HELD UNDER LEASE, LICENSE OR PERMIT,
1901 AND 1908-1912.**

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Right of Purchase Leases ...	1,067	2,931	5,224	667	667	667
Pastoral Leases ⁺ ...	111,476,240	102,123,040	95,559,840	98,729,120	92,045,540	94,329,600
Other Leases ⁺ ...	1,176,961	1,293,457	512,650	445,236	1,698,754	1,696,171
Total Leased...	112,654,288	103,419,428	96,077,714	99,175,023	93,744,961	96,026,438

1. See Table given below.

The following statement gives particulars of the areas held under the various types of lease and license as at the end of the year 1912, and included in the previous table under the heads of "pastoral leases" and "other leases."

"Pastoral leases" include:—

Pastoral leases ...	...	...	...	69,483,520 acres
Pastoral permits ...	...	...	...	24,219,520 "
Annual pastoral leases ...	...	...	...	378,240 "
Grazing Licenses (under Crown Lands Ordinance, 1912) ...	...	...	...	248,320 "
Total "Pastoral leases" ...	...	...	...	94,829,600 acres

"Other Leases" include:—

Agricultural leases ...	...	...	...	8,317 acres
Leases for special purposes ...	...	...	...	10 "
Mineral leases ...	...	...	...	1,290 "
Gold leases ...	...	...	...	762 "
Occupation and special licenses ...	...	...	...	52 "
Tin-dredging permits ...	...	...	...	400 "
Coal and oil permits ...	...	...	...	1,664,060 "
Mixed farming permits ...	...	...	...	1,280 "
Approved applications under Tropical Products Act 1904 ...	...	...	...	20,000 "
Total "Other leases" ...	...	...	...	1,696,171 acres

§ 8. Closer Settlement.

1. Introduction.—In all the States, Acts have been passed authorising the Governments to repurchase alienated lands for the purpose of cutting them up into blocks of suitable size and throwing them open to settlement on easy terms and conditions. Special Acts have also been passed in several of the States authorising the establishment on particular lines of co-operative communities, village settlements, and labour colonies. Lands may be acquired either compulsorily or voluntarily in New South Wales, Victoria, Queensland, and Tasmania, but only voluntarily in South Australia and Western Australia.

The following table gives particulars up to the latest available date of operations under the Closer Settlement Acts for each State and the whole Commonwealth:—

**CLOSER SETTLEMENT.—TOTAL AREAS ACQUIRED AND ALLOTTED UP TO
30th JUNE, 1913.**

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Cwth.
Area acquired ... acres	676,439	563,554	664,363	619,568	144,333	49,206	2,717,463
Purchasing price ... £	2,525,056†	4,184,447	1,713,165	1,890,424	144,526	135,857	10,593,475
Farms, etc., allotted ... No.	1,554	3,906	2,423	1,705	16	197	12,801
acres	724,924	438,321	525,168	482,011	10,835	42,549	2,223,808

The following table shows the areas of private lands acquired in each State for the financial year 1901, and for each year from 1908 to 1913:—

CLOSER SETTLEMENT.—AREAS OF PRIVATE LANDS ACQUIRED, 1901 and 1908 to 1913.

Year ended 30th June.	N.S.W.	Victoria.	Q'land.*	S. Aust.*	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	...	28,553	132,760	...	46,624	...	207,937
1908 ...	142,403	211,140	456,742	354,454	170,881	25,177	1,360,797
1909 ...	321,209	237,400	497,095	500,464	215,822	33,079§	1,805,069
1910 ...	461,723	343,829	497,095†	527,501‡	249,522	34,441§	2,114,111
1911 ...	676,278	455,954	537,449†	592,972‡	297,391	34,448§	2,594,492
1912 ...	676,438	515,604	664,363†	619,469	303,469	45,731§	2,825,074
1913 ...	676,439	563,554	664,363	619,568	144,333	49,206§	2,717,463

* Particulars are for calendar years.

† To the preceding 31st December.

‡ To 30th June.

§ Including 4581 acres of Crown lands.

2. Government Loans to Settlers.—For the purpose of promoting pastoral, agricultural, and similar pursuits, and with the object of assisting settlers in erecting buildings and carrying out improvements on their holdings, general systems have been established in all the States, under which financial aid is rendered to settlers by the State Governments. These general systems are more particularly referred to in the section in this book dealing with "Agriculture." In many of the Closer Settlement and similar Acts, however, special provisions have been inserted with the object of lending money to settlers taking up land under these Acts, with which to build homes or effect improvements. The principal features of these provisions are referred to below.

3. New South Wales.—Under the Closer Settlement Act of 1901 provision was made for the acquisition of private lands or of Crown lands held under lease, for the purpose of closer settlement. No power of compulsory resumption was conferred by the Act, which was consequently practically inoperative. Under the Closer Settlement Act of 1904, as amended in 1906, 1907, and 1909, and the Closer Settlement Promotion Act 1910, the Government is empowered to resume private lands, either by agreement or by compulsory purchase, and to alienate them on favourable terms to persons who desire to settle and make homes for themselves and their families on the soil. The administration of the Closer Settlement Acts is in the hands of a Board. Land acquired under the Acts is subdivided into blocks or farms, and by notification in the *Government Gazette* is declared to be a settlement purchase area available for application. The *Gazette* notice also gives all necessary information as to the class and character of the land, and the capital value, area, etc., of each block or farm.

(i.) *Closer Settlement Purchase.* Under this tenure a settler may acquire the freehold of the land under a system of deferred payments. A deposit of 5 per cent. of the notified value of the settlement purchase must be lodged with the application, and a similar amount by way of instalment, paid annually until the purchase-money, together with interest at the rate of 4 per cent., is paid off. Under this system the balance due to the Crown will be paid off in thirty-eight years, the holding then becoming a freehold. A condition of residence for ten years attaches to every settlement purchase. Under the

amending Act of 1909 postponement of the payment of instalments may be granted by the Minister, subject to the conditions (a) that additional improvements to the value of the amount postponed be made on the land within twelve months, and (b) that interest at 4 per cent. per annum be paid on the amount postponed.

(ii.) *Closer Settlement Annual Leases.* Leases for areas not exceeding 320 acres may be obtained under the Closer Settlement Acts at a rent fixed by the Board. They may be renewed from year to year on payment of the yearly rent in advance. The land held under this form of lease may be applied for by the lessee as a settlement purchase.

(iii.) *Sales by Auction.* Areas within closer settlement districts necessary for town-ship settlement may be set apart by notification in the *Gazette*. Allotments, each of which may not exceed half an acre in extent, within such areas may be sold by auction.

(iv.) *Private Subdivision.* An important feature of the amending Act of 1909 is the power which is given to owners for private subdivision of lands which have been notified by proclamation for resumption. Upon the owner entering into an agreement with the Minister to subdivide the land and to sell or lease in such areas and subject to such terms as may be agreed upon, the Minister is empowered to suspend the power of resumption for a period not exceeding two years.

(v.) *The Closer Settlement Promotion Act 1910.* Under this Act any three or more persons who are qualified to hold settlement purchases and who desire to purchase from the same owner any private lands may, upon entering into an agreement with the owner and subject to valuation by the Advisory Board and the Savings Bank Commissioners, acquire such lands through the Minister on Closer Settlement conditions. The maximum sum which may be advanced for the purposes of this Act may not exceed £1,000,000 in any financial year.

The following table shews the number and area of farms allotted since the passing of the Act:—

NEW SOUTH WALES.—CLOSER SETTLEMENT PROMOTION ACT 1910.

Year.	Farms Allotted—		
	Number.	Area.	Amount Advanced.
		Acres.	£
1910-11.	26	10,785	54,131
1911-12.	209	84,279	418,941
1912-13.	274	107,791	599,145
Total	509	202,855	1,072,217

(vi.) *Areas Acquired and Disposed of.* Up to the 30th June, 1913, ten areas had been opened for settlement under the Closer Settlement Acts.

The following statement gives particulars of the aggregate areas opened up to the 30th June, in each year from 1909 to 1913:—

NEW SOUTH WALES.—CLOSER SETTLEMENT AREAS, 1909 to 1913.

Year Ended 30th June.	Areas.			Capital Values.		
	Acquired Lands.	Adjoining Crown Lands.	Total.	Acquired Lands.	Adjoining Crown Lands.	Total.
	Acres.	Acres.	Acres.	£	£	£
1909	321,209	28,064	349,273	1,246,508	42,878	1,289,386
1910	461,723	83,045	544,768	1,624,858	147,977	1,772,835
1911	591,861	86,127	677,988	2,293,399	148,696	2,442,095
1912	676,488	87,760	764,198	2,666,516	156,796	2,823,312
1913	676,489	87,759	764,198	2,667,203	159,973	2,827,176

The total area thus set apart has been divided into 1608 farms comprising 738,876 acres, the remaining area being reserved for recreation areas, roads, stock routes, schools, etc.

The following table gives particulars as to the disposal of the farms by closer settlement purchase for each year ended the 30th June, 1909 to 1913 :—

NEW SOUTH WALES.—CLOSER SETTLEMENT ALLOTMENTS, 1909 to 1913.

Year.	Farms Allotted by Board to Date.			Total Amount received in respect of Settlement Purchases.	Total Number of Applications received.
	Number.	Area.	Value.		
	No.	Acres.	£	£	No.
1908-9 ...	683	312,075	1,192,283	73,133	953
1909-10 ...	941	471,639	1,731,480	147,945	1,209
1910-11 ...	1,316	604,319	2,420,035	220,720	1,328
1911-12 ...	1,485	673,610	2,722,564	274,440	1,555
1912-13 ...	1,554	724,924	2,767,370	363,425	1,568

(vii.) *Labour Settlements.* These settlements were founded by the Labour Settlements Acts 1893 and 1894, which have now been amended and repealed by the Labour Settlements Act 1902. Land may be set apart for lease for a period of 28 years as a labour settlement under the superintendence of a Board of Control. The functions of the Board of Control are to enrol members of the settlement; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute the wages and profits. The Minister is empowered to grant financial assistance to the Board of Control.

Settlements Established. Only two settlements had been established under the Act up to the 30th June, 1913. Particulars are given in the following statement :—

NEW SOUTH WALES.—PARTICULARS OF LABOUR SETTLEMENTS, 30th JUNE, 1913.

Settlement.	Date of Establishment.	Area.	Population.				Value of Improvements.	Loans Advanced by the Government.
			Men Enrolled.	Women.	Children.	Total.		
		Acres.					£	£
Bega ...	1893	1,360	26	29	95	150	3,110	2,420
Wilberforce ...	1893	435	10	9	22	41	1,450	2,479
Total ...	—	1,795	36	38	117	191	4,560	4,899

The Murrumbidgee Irrigation Act 1910 provides for the acquisition of 1,668,000 acres near Narrandera, in Riverina, for irrigation and other purposes in connection with the Burrinjuck Irrigation Scheme. Part of this area has since been made available. (See *Water Conservation*, Section XVI., § 3.)

4. **Victoria.**—(i.) *Closer Settlement Acts, 1904 to 1909.* The Closer Settlement Acts (§ 2, p. 266) are administered by a Board consisting of three persons appointed by the Governor-in-Council, and intrusted with power to acquire, either compulsorily or by agreement, private lands in any part of the State for the purpose of Closer Settlement. The Board may dispose of all lands acquired, either Crown lands or repurchased lands, on conditional purchase leases either as (a) farm allotments not exceeding £2500 in value, (b) workmen's homes allotments not exceeding £250 in value, and (c) agricultural labourers' allotments not exceeding £350 in value. The price of the land must cover the cost of the original purchase and the cost of all improvements. Land acquired by the

Board may also be sold in small areas in fee simple as sites for churches, public halls, butter factories, creameries, or recreation reserves.

The Board may approve of an agreement between an owner and one or more persons to purchase a farm or farms, not exceeding £2500 in value. On the property being acquired by the Board, the applicant obtains a lease under Closer Settlement conditions.

(a) *Closer Settlement Leases.* Every conditional purchase lease is for such a term of years as may be agreed upon by the lessee and the Board, and payment must be made with interest at $4\frac{1}{2}$ per cent. per annum by sixty-three half-yearly instalments, or such lesser number as may be agreed upon. Under the amending Act of 1906 postponement of payment of instalments may be granted by the Board up to 60 per cent. of the value of improvements. The lessee must personally reside during eight months in each year on his allotment, and for six years he must carry out prescribed improvements. Thereafter he may, with permission, transfer, assign, mortgage or sublet his allotment. After twelve years, if all conditions have been fulfilled, a Crown grant, with the same residence condition as that contained in the lease, will be issued. In the case of workmen's homes allotments the land must be fenced within one year, and a dwelling-house to the value of at least £50 must be erected within the same time; within two years further improvements must be made to the value of at least £25. As regards agricultural labourers' allotments, a dwelling-house to the value of at least £30 must be erected within one year, and within two years the allotment must be fenced.

(b) *Advances to Settlers.* The Board may make advances for the purpose of fencing and building dwelling-houses, and is empowered to erect dwelling-houses, outbuildings, or improvements on any allotment at a cost not exceeding £250 for any one allotment. Any sum so expended is repayable by instalments extending over a prescribed period, not greater than twenty years. Provision has also been made for deferring payments in cases of hardship, as well as for advances (to the extent of 60 per cent. of the value of the improvements) to enable work to be carried on. Special advances may also be granted to purchase wire netting in rabbit-infested districts.

(c) *Loans to Municipalities.* Under the Amendment Act of 1907 loans may be made out of the Closer Settlements Fund for the purpose of carrying out any road-making or other public works within the boundaries of an estate.

(d) *Areas acquired and made available for Closer Settlement.* The following statement shows the operations which have taken place in Victoria under the provisions of the Closer Settlement Acts, 1898 to 1910, up to the 30th June, 1901 and 1908 to 1913 :—

VICTORIA.—CLOSER SETTLEMENT, 1901 and 1908-1913.

Year ended 30th June.	Total Area Acquired by Government to Date.	Total Cost to Date.	How Made Available for Settlement.						Number of Applications Granted to Date.	Total Receipts to Date.	Repayments of Principal to Date.	Area Available for Settlement.
			Farm Allotments.	Workmen's Homes Allotments.	Agricultural Labourers' Allotments.	Town Allotments.	Roads and Reserves.					
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	No.	£	£	Acres	
1901	28,553	151,566	28,461	69	—	44	240	193	7,529	—	—	
1908	211,140	1,471,300	186,971	473	917	724	1,708	1,470	245,095	85,501	10,549	
1909	237,400	1,579,958	193,015	238	660	610	2,242	1,645	337,803	121,247	5,789	
1910	343,829*	2,390,738	237,670	243	1,659	617	2,242	1,880	391,746	153,890	9,302	
1911	455,954	3,177,831	363,676	571	2,761	—	—	2,708	606,558	234,038	54,214	
1912	515,604	3,721,485	474,410	512	3,651	—	—	3,354	765,076	318,338	71,367	
1913	563,554	4,315,305	498,701	512	3,658	3,564	6,334	3,306	922,842	397,803	64,550	

* Includes eight estates (97,315 acres) not yet made available for settlement.

(e) *Areas Alienated and in Process of Alienation.* The following table shews, so far as available, particulars of areas alienated absolutely and in process of alienation on the 30th June, 1901, and from 1908 to 1913 :—

VICTORIA.—CLOSER SETTLEMENT. AREAS ALIENATED AND IN PROCESS OF ALIENATION, 1901 and 1908-1913.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.	1913.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Alienated Absolutely—</i>							
Conditional Purchases completed ...	...	2,504	4,924	8,705	9,770	9,804	12,560
Sold for cash, etc. ...	183	268	1,307	1,320	1,382	1,450	8,694
Total ...	183	2,772	6,231	10,025	11,152	11,254	21,254
<i>In Process of Alienation ...</i>	...	174,812	190,784	221,565	303,024	397,402	425,761

(ii.) *The Small Improved Holdings Act 1906.* Under this Act, which has been repealed, 2822 acres at a cost of £53,568 allotted to 260 settlers were purchased close to towns where industrial employment could be obtained by the settlers.

These settlements are now under the control of the Closer Settlement Board.

(iii.) *Village Communities.* The settlement of land by Village Communities is now provided for in the Land Act 1901, but is not availed of to any extent. Certain unalienated Crown lands were surveyed into allotments of one to twenty acres. The price is not less than twenty shillings an acre. Additional areas may be acquired by conditional purchase. The rent is a nominal one for three years. The total amount of monetary aid advanced up to the 30th June, 1912, was £67,379, of which sum the amount repaid to date was £40,300. After three years a lease may be obtained.

Particulars of areas in process of cultivation under the Act are given hereinafter. (See § 11, 3.)

On the 30th June, 1913, there were 928 settlers actually residing, and 109 not residing, but improving, making a total of 1037 in occupation. Including wives and children the total number in residence was 4310. At the same date the area under cultivation was 11,257 acres; the value of live stock £56,596, and of improvements, £166,217.

(iv.) *Closer Settlement in the Irrigated Districts.* The movement for closer settlement in the irrigated districts started about four years ago. The State had expended between three and four million pounds on irrigation works, which were not being used to their full extent. Under the Goulburn Scheme, the largest of the State works, more than half the available water was being wasted. The reason was lack of people to cultivate the land as irrigation requires. Previously, in the various districts the average size of farms varied from 400 to 600 acres, while under irrigation from 20 to 80 acres will now give employment to a good-sized family and furnish them a comfortable living. The large farms of the irrigation districts could not be properly cultivated by their owners, and the only way to make irrigation a success was to subdivide these holdings and bring in farmers to cultivate the smaller areas. To this end the State offered to buy suitable land in any district having a reliable and ample water supply at a price fixed by impartial expert valuers, and has now purchased about 111,000 acres for this purpose. This land is sold to settlers on 31½ years' terms with 4½% interest on deferred payments. These payments are calculated on the Credit Foncier basis and are equalised through the whole period. As a result, the settlers by paying an additional 1½ per cent., or six per cent. in all, on the cost for 31½ years pay off both principal and interest. To help the settler of small capital, the State will build him a house and give 15 to 20 years to pay for it, will prepare a part of his area for irrigation and allow payments to be extended over 10 years. The cash payments required are as follows :—On houses costing less than £100, £10; from £100 to £150, £15; while on houses costing more the cash payment

varies from 12 to 30 per cent. of the estimated cost. A cash payment of one-fifth the estimated cost of preparing land for irrigation is required. The State also makes loans to settlers equal to 60 per cent. of the value of permanent improvements, these loans to be repaid in 20 years. Five per cent. interest is charged on all advances—whether for houses, preparing land, or money furnished the settler. In the past four years 914 irrigated blocks, averaging 62 acres, have been taken by settlers, of whom 335 were from overseas, chiefly from Great Britain, and 579 were Australian. At Shepparton, one of the oldest of these settlements, there are now 100 families living where there were originally six. In Koyuga there are now 46 families with good houses, many young orchards, fine crops of lucerne and vegetables, where in November 1910 there was not a house, a family, or an acre of cultivated land. Under three years ago there were 27 houses in the Rochester district, now there are over 230. In Tongala there are now 180 houses where two years ago there were 30.

Similar progress has been made in the other settlements. Houses now being erected are of a better type than the original ones. This has been made possible because the settlers now applying have as a rule more capital than the earlier ones and desire better homes.

5. **Queensland.**—Under the provisions of the Closer Settlement Act of 1906 private lands may be re-purchased by the Crown, either by agreement or compulsorily.

(i.) *Compulsory Acquisition.* The owner of an estate in possession, the whole of which is proposed to be taken compulsorily, has the right to retain in one block, land of the value of £10,000 to £20,000 according to the value of the whole estate. The maximum sum which may be expended on the acquisition of land for the purpose of closer settlement is £500,000 in any one year.

(ii.) *Disposal of Land.* A sufficient part of the land acquired must be set apart for roads, public reserves, and townships, and the remainder is proclaimed open for selection as agricultural farms under the Land Act 1910, which repealed the Land Acts 1897 to 1909; the term of the lease is 25 years. The rent to be paid for the first year is equal to £10 for every £100 of the purchasing price; and (no payment being required during the second, third, or fourth years) an annual payment of £8 2s. 7d. for every £100, continued from the fifth to the twenty-fifth year, will, at the end of the term, have paid off the principal sum together with interest.

(iii.) *Areas Acquired and Selected.*—The following table gives particulars of the operations under the above Acts at the end of the year 1901 and of each year from 1908 to 1912:—

QUEENSLAND.—CLOSER SETTLEMENT, 1901 and 1908-1912.

Year.				Number of Estates Acquired.	Total Area Acquired to Date.	Total Amount of Purchase Money.	Total Area Selected to Date.
					Acres.	£	Acres.
1901	...	...	...	15	132,760	335,056	124,710
1908	...	...	...	27	456,742	1,208,013	364,334
1909	...	...	...	27	497,095	1,349,251	409,381
1910	...	...	...	27	537,449	1,490,489	437,496
1911	...	...	...	29	644,385	1,670,330	498,315 ¹
1912	...	...	...	29	664,363	1,713,165	525,168

1. In addition there were at the end of the year 1912, 11,750 acres sold at auction and 3136 acres retained by the Government for experimental farms and other sales.

The total area opened for selection up to the end of the year 1912 was 597,782 acres, of which 525,168 acres had been selected by 2077 selectors. There remained 72,614 acres unselected or reserved. The total amount of rent paid up to the same date was £878,855, the amount in arrear being £7320.* At the end of the year 1912 there were 2077 selectors holding 2177 agricultural farms, 244 unconditional selections, and two prickly pear infested selections. In addition, land and improvements to the value of £76,726 had been sold at auction.

(iv.) *The Special Agricultural Selections Acts 1901 to 1905.* These Acts were partly repealed by the Amending Act of 1909, which was in its turn repealed by the Land Act 1910. Under the last Act land may be set apart for members of bodies of selectors who desire to settle in the same locality. The terms and conditions are similar to those in force for single selectors. Every group selection shall be subject to the condition of personal residence during the first five years of the term.

The Special Agricultural Selections Act 1905 provides that financial aid may be granted to all or any of the members of a body of selectors of agricultural homesteads. Advances may also be made to each selector for a value not exceeding £80 for the purpose of buying tools, rations, stock and poultry.

The portions opened for "group settlement" in 1912 numbered 906, and comprised a gross area of 557,346 acres. Up to the end of that year 678 portions, comprising 397,738 acres, valued at £233,914, had been applied for by members of the bodies of settlers for whom they were opened. The greater part of the remaining lots have since been selected.

6. **South Australia.**—Under the provisions of the Crown Lands Acts the Commissioner may repurchase land for the purposes of closer settlement at a cost not exceeding £600,000 in any two years.

Reference has already been made to the provisions of the Irrigation and Reclaimed Lands Acts 1908, regarding the settlement of reclaimed lands. (See § 7, 5 iv.)

(i.) *Disposal of Land.* The Crown Lands Act Further Amendment Act 1910 enlarges the value of the blocks into which estates may be subdivided for closer settlement purposes from £2000 to £5000 unimproved value. The purchase money with interest thereon at 4 per cent. per annum is payable in seventy half-yearly instalments, the first ten payments being interest only.

For the first five years, improvements to the value of £3 for every £100 of the purchase money must be yearly effected.

(ii.) *Areas Acquired and Selected.* The following table shews the area of land acquired by the Government in South Australia for the purposes of closer settlement, and the manner in which the same has been disposed of under the provisions of the Crown Lands Acts for the years 1902 and 1908 to 1912:—

SOUTH AUSTRALIA.—CLOSER SETTLEMENT, 1902 and 1908 to 1912.

Year.	Area of Lands Re- purchased to 31st Dec.	Agree- ments with Covenants to Purchase.	Total Area Leased as Homestead Blocks.		Perpetual Leases.	Mis- cellaneous Leases.	Sold.	Remainder Un- occupied (including Roads).
			Right of Purchase.	Perpetual Lease.				
	Acres	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1902	156,481		2,717	3,073	90,128	309	403	59,851
1908	354,454	261,457	1,590	1,953	74,651	281	9,142	5,380
1909	500,464	296,013	1,381	1,779	75,045	50,056	24,641	51,549
1910	527,501	357,480	1,241	1,510	62,386	40,077	35,266	29,541
1911	622,422	411,370	1,077	1,414	55,121	40,082	43,969	69,389
1912	624,122	436,038	894	1,386	49,857	40,101	57,884	38,408

During the financial year 1912-13 one property of 80 acres was repurchased. The total area repurchased at 30th June, 1913, was 624,220 acres, the purchase money being £1,918,441. Of that area 544,508 acres had been allotted to 2387 persons, the average area to each being 228 acres.

(iii.) *Irrigation Areas.* Under the Irrigation and Reclaimed Lands Act, 1908, 1909 and 1910, special provisions are made for granting perpetual leases of reclaimed lands. The maximum area of irrigable or reclaimed land one person may hold in any irrigation area is 50 acres. Each block is offered under perpetual lease, at a rent not less than a sum equivalent to 4 per cent. on the unimproved value of the land, plus the cost of reclaiming. For the first year only one-quarter of the fixed rent is payable, for the second year one-half, and for the third year three-quarters.

(a) *Irrigation Boards.* Irrigation Boards, to whom advances of money may be made by the Commissioner for Crown Lands, may be constituted in irrigation areas.

(b) *Government Loans to Settlers.* Under Part V. of the Act a fund is to be constituted, to be called the Lessees of Reclaimed Lands Loan Fund, consisting of money provided by Parliament, to be advanced to assist lessees to make improvements on their lands. The total amount owing by any lessee may not exceed £300. In cases of hardship the time may be extended by the Commissioner, the deferred payments carrying interest at 5 per cent.

During 1910 the Waikerie and Berri Irrigation Areas were gazetted. No irrigation areas were gazetted in 1911, but Rameo Village District has been added to the Waikerie Irrigation Area.

(iv.) *Village Settlement.* Out of the reserved lands the Commissioner is directed to set apart for the purpose of village settlement such land as he shall consider fit (a) for horticultural purposes, to be termed "horticultural land;" (b) for agricultural purposes, to be termed "commonage land;" and (c) land whereon any irrigation works are situated. Land so set apart is to be divided as follows:—Horticultural lands into blocks of as nearly as practicable equal unimproved value, and of about ten acres in extent; and the commonage lands into one or more blocks of such area as the Commissioner may determine, and the lands so set apart in each case form the district of the association. No person may hold more than two blocks. Commonage lands may only be leased to the association on perpetual lease, and all unleased horticultural blocks are under the control of the association. Every member of each association must provide or contribute towards the maintenance and regulation of irrigation works and the care and cultivation of the commonage lands.

As the Waikerie district was proclaimed an irrigation area under the Irrigation and Reclaimed Lands Acts 1908 and 1909, and the settlers of Kingston have applied to be dealt with under the same Acts, this would leave only the Lyrup Village Settlement, which is in a better position, both financially and as regards population, than the others.

(v.) *Homestead Blocks.* Aboriginal reservations, except those at Point McLeay or Point Pearce, and other suitable lands may be offered as homestead blocks on perpetual lease or lease with a right of purchase. Each block must not exceed £100 in value, and residence by a member of the family for at least nine months of every year is compulsory.

There is now hardly any demand for homestead blocks, persons generally preferring small blocks of repurchased or Crown lands on ordinary conditions. The system appears to be of value only in centres of population where work can be obtained, and within a reasonable distance of a school.

(a) *Advances to Blockholders.* Advances up to £50 may be made by the Commissioner to any homestead blockholder who has complied with the conditions of his lease or agreement, to assist in erecting permanent buildings on the blocks, or other improvements. Advances must be repaid, with interest at 4 per cent. per annum, by twenty equal instalments, commencing twelve months from the date of advance. The Commissioner may, in case of hardship, extend the time of repayment, deferred payments bearing interest at 5 per cent. per annum. The total amount advanced up to the 30th June, 1913, was £40,802, of which £38,322 had been repaid.

(b) *Particulars of Homestead Blocks.* The total number of leases and agreements of which purchase had been completed to the 31st December, 1912, was 1998, comprising 30,238 acres, at a purchase price of £71,112, or an average of £2 7s. per acre, the average of each holding of which purchase was completed being 15 acres.

7. **Western Australia.**—Under the Agricultural Lands Purchase Act 1909, which repealed and consolidated the Agricultural Lands Purchase Acts 1896 to 1904, sums not exceeding in the aggregate £400,000 may be expended on the repurchase of Crown lands near the railways, suitable for immediate cultivation.

(i.) *Acquisition of Land by the Government.* For the purpose of carrying out the provisions of the Acts, a Land Purchase Board has been constituted. Advised by the report of the Board, the Minister, with the approval of the Governor, may make a contract for the acquisition of the land by surrender at the price fixed by the Board, or at any lesser price.

(ii.) *Sale of Repurchased Land.* After reservation of part of the repurchased land for public purposes, the remainder is thrown open for selection. The maximum quantity held by one person must not exceed 1000 acres; in special cases 2000 acres.

(iii.) *Conditions of Sale to Selectors.* The maximum selling price of any repurchased land is equal to 105 per cent. of the actual cost of the land plus the cost of any improvements made upon it. A lease for twenty years is issued at a rent, the half-yearly instalments of which are to be at the rate of £3 17s. 9d. for each £100 of the selling price. Improvements must be made to the value of one-fifth of the purchase-money every two years of the first ten years of the lease. One-half of the land must be fenced within the first five years and the whole within ten years. Loans may be granted to selectors under the provisions of the Agricultural Bank Acts.

(iv.) *Areas Acquired and Selected.* The transactions conducted under the provisions of the Agricultural Lands Purchase Acts are shewn for 1901 and for each year from 1908 to 1913 in the subjoined table:—

WESTERN AUSTRALIA.—CLOSER SETTLEMENT, 1901 and 1908-9 to 1912-13.*

Year.	Total Area Acquired.	Total Purchase-money.	Roads, Reserves, etc.	Total Area made available for Selection.	Area Selected during the Year.	Total Area occupied to Date.	Balance of Area available for Selection.	Total Revenue received to Date.
	Acres.	£	Acres.	Acres.	Acres.	Acres.	Acres.	£
1901 ...	46,624	52,764	1,459	45,165	4,295	37,235	7,929	14,451
1908-9 ...	215,822	131,373	11,142	204,680	30,950	189,520	15,531	94,438
1909-10	249,522	158,041	10,757	228,823	25,134	213,416	15,407	111,125
1910-11	297,391	262,302	14,876	282,515	50,032	261,942	20,573	129,386
1911-12	303,469	270,622	14,506	282,985	8,375	264,885	18,000	151,110
1912-13	446,804	421,333	12,799	290,670	10,335	270,945	19,724	175,245

* The figures for 1901 are up to 31st December. For 1908-9 and subsequent years they are given as up to 30th June.

On the 30th June, 1913, the total expenditure, exclusive of purchase-money but including interest, was £88,460, which left a balance of £86,785. At the same date the amount invested as sinking fund was £86,426. During the year 1912-13 two properties, viz., Henty and Yandanooha, having a total area of 144,526 acres, were purchased, but have not yet been made available for selection.

(v.) *Working Men's Blocks.* Any person not already holding land within the State is entitled to obtain a lease of lands which have been surveyed and thrown open for selection as working men's blocks. The maximum area that may be selected by one person is, if within any town or goldfield, half an acre, or five acres elsewhere. The price is not less than twenty shillings per acre, payable in ten years by half-yearly instalments. Residence and improvement conditions must be fulfilled. At the expiration of the lease, or at any time after five years from the date of the commencement of the lease, upon compliance with all conditions and upon payment of the full purchase-money and fee, a Crown grant will be issued. No person who has once held a working-man's block is allowed to select another, except under very special circumstances.

The following table shews the number and area of accepted applications for working men's blocks during each year, as well as the total number and area in existence at the end of the year 1901 and for each year from 1908 to 1913:—

**WESTERN AUSTRALIA.—PARTICULARS OF WORKING MEN'S BLOCKS,
1901 and 1908 to 1913.**

Year ...	...	1901.	1908. ¹	1909. ¹	1910. ¹	1911. ¹	1912. ¹	1913. ¹
NUMBER AND AREA OF ACCEPTED APPLICATIONS DURING YEAR.								
Number		2	91	88	122	53	28	1
Area in Acres		6	131	189	148	99	56	4
NUMBER AND AREA OF BLOCKS OCCUPIED AT END OF YEAR.								
Number		7	387	408	440	388	327	230
Area in Acres		31	537	667	719	722	688	617

1. For financial year ended 30th June.

During the years 1907 to 1911 residential blocks on the goldfields were made available as workingmen's blocks, instead of under residential lease, as before, and since 19th October, 1911, the system of leasehold has been reverted to.

8. *Tasmania.*—The principles of closer settlement were not introduced into Tasmania until the Closer Settlement Act of 1906 was passed. Under this Act, which was amended in 1908, and again in 1911, power is given to the Minister for Lands, on the recommendation of the Closer Settlement Board, to purchase by agreement private land in any part of Tasmania for the purpose of closer settlement, and also to deal with and dispose of any unoccupied Crown land for the same purpose.

(i.) *Disposal of Land.* Lands so brought under the Act are subdivided into farm allotments of a suitable size—not exceeding £1500 in value—and are disposed of by way of lease for ninety-nine years. The rental is determined by the Board at a rate not exceeding 5 per cent. per annum on the capital value of the land. Any lessee who has fulfilled the conditions under the Act may, after the expiration of ten years of the term of the lease, purchase the land leased to him. Under the Amendment Act of 1908 the Minister is authorised to lease any allotment of land exceeding £1500, but not exceeding £4000 in value, exclusive of buildings.

A lessee must improve his holding to a value equal to $2\frac{1}{2}$ per cent. on the capital value of the land in each of the first ten years of the term of his lease, and he must, within two years of the date of the lease, personally reside on his allotment during at least eight months of each of the following nine years.

Under the Amendment Act of 1911, provision is made for reserving a proportion of the allotments thrown open, and leasing the same, under special terms and conditions, to *bonâ fide* immigrants.

(ii.) *Advances to Settlers.* The total advance by the Government in aid of the cost of effecting improvements to any one lessee must not exceed one-fifth of the capital value of such lessee allotment, and must not exceed pound for pound the sum expended by him in fencing and building. Such advances must be repaid, together with interest at 5 per cent., in equal half-yearly instalments.

(iii.) *Special Sales.* The fee-simple of land acquired may be disposed of by sale on the recommendation of the Board as sites for churches, public halls, dairy factories, fruit-preserving factories, mills, or creameries. The area sold may not exceed one acre in the case of a church or public hall, or five acres in other cases.

(iv.) *Areas Acquired and Selected.* Up to the 30th June, 1913, ten areas, viz., Cheshunt, Mount Pleasant, Forester No. 1 and No. 2, Isandula, Brinktop, Frogmore, Woolmers, Branzholm and Hillhome had been opened up for closer settlement. Particulars are given in the following statement:—

TASMANIA.—CLOSER SETTLEMENT, 1907 to 1913.

Year.	Number of Farms made Available.	Number of Farms Allotted.	Area of Farms Allotted.	Rental of Farms Allotted.	Total Area Purchased.
			Acres.	£	Acres.
1907	61	54	10,365	1,923	13,397
1908	28	26	8,191	634	11,780
1909	49	45	9,117	789	7,902
1910	9	15	1,872	539	1,362
1911	37	36	4,965	168	5,143
1912	11	7	3,912	563	6,147
1913	18	21	5,652	1,134	3,745
Total	213	204	44,074	5,750	49,476

The total purchase-money paid by the Government up to the 30th June, 1913, was £135,857.

§ 9. Occupation of Crown Lands under Leases and Licenses Issued by Mines Departments.

1. *Introduction.*—Leases and licenses for the occupation of Crown lands for mining and other purposes are issued by the Mines Departments in all the States. Such leases and licenses may be issued with respect to all Crown lands, whether otherwise unoccupied or whether occupied also under leases and licenses issued by the Lands Departments. Certain Crown lands, such as reserves, etc., are, however, subject to special conditions.

(i.) *Mining on Private Lands.* Certain of the Crown lands of the several States have been alienated from time to time, subject to various reservations in respect of gold and other minerals which might afterwards be found therein. Other lands have been alienated without such reservation, but as the mineral gold does not pass from the Crown unless by express conveyance, it has remained the property of the State on all alienated lands. All lands alienated or in process of alienation are open to mining for gold; but to mining for other minerals, those lands only are open in respect of which the rights are reserved in the grants. There are, however, generally certain reservations, such as those with reference to town or village lands and lands which have been built on or are used for special purposes. The working of minerals on private lands is regulated in the several States either by special Acts or by special provisions of the Acts relating to mining.

(ii.) *Leases and Licenses Issued and Total Areas of Crown Lands Occupied.* The following tables shew the total areas of Crown lands for which leases and licenses for mining purposes were issued in each State during 1901 and for each year from 1908 to 1912 inclusive, and also the total areas of Crown lands occupied for mining purposes at the end of each year during the same period:—

**CROWN LANDS, LEASES AND LICENSES FOR MINING PURPOSES, 1901 and
1908 to 1912.**

Particulars.			N.S.W.	Victoria. ¹	Qld. ²	S. Aust. ³	W. Aust.	Tas.	Qwth.
AREAS FOR WHICH LEASES AND LICENSES ISSUED.									
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901	...	...	50,349	...	55,698	93,985	37,593	18,125	255,750
1908	...	...	81,418	42,716	35,834	69,202	57,093	20,546	306,809
1909	...	...	72,696	36,114	43,591	49,135	55,133	20,414	277,083
1910	...	...	31,674	38,655	41,687	216,273	87,429	24,173	439,891
1911	...	...	42,865	25,353	40,642	59,918	94,853	26,454	290,085
1912	...	...	15,548	34,047	50,783	259,381	64,939	13,920	438,618
TOTAL AREA OCCUPIED AT END OF YEAR.									
				Not available					
1901	...	...	134,209		124,182	14,140	66,682	50,362	389,575 ⁴
1908	...	...	218,931		140,735	100,387	130,970	56,693	647,716
1909	...	...	236,265		147,010	84,293	128,129	55,819	651,516
1910	...	...	235,235	136,710	164,737	197,714	164,963	57,908	957,267
1911	...	...	233,030	116,420	171,078	89,077	158,946	58,038	826,589
1912	...	...	228,526	123,228	203,059	292,320	144,846	49,239	1,041,218

1. Including private lands, leases, and water right licenses only. 2. Exclusive of lands held under miners' rights only, amounting in 1908 to approximately 27,500 acres. 3. Exclusive of miners' rights. 4. Excluding Victoria, except for 1910, 1911 and 1912.

2. **New South Wales.** Under the provisions of the Mining Act 1906 and the regulations made thereunder, Crown lands may be occupied for mining or other purposes by virtue of (i.) miners' rights; (ii.) business licenses; (iii.) authorities to prospect; or (iv.) leases.

A description of the conditions under which these licenses and leases are granted may be found in previous issues of the Year Book. (See Year Book No. 6, p. 307.)

(i.) *Particulars of Leases and Licenses Issued, 1912.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1912:—

NEW SOUTH WALES.—LEASES AND LICENSES,
ISSUED BY MINES DEPARTMENT DURING YEAR 1911.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
<i>Leases—</i>	Mining Act 1906	To mine for—	Acres.
	" " " " " " " "	Gold	1,566
	" " " " " " " "	Minerals other than coal ...	6,851
	" " " " " " " "	Coal	4,820
	Mining Act 1906 (Dredging) ...	Leases (mining purposes) ...	110
	" " " " " " " "	Gold	2,018
	" " " " " " " "	Minerals other than gold ...	1
<i>Other forms of occupancy—</i>	Mining Act 1906	Authorities to prospect ...	183
Total	—	—	15,548

It may be remarked that the Mining Act 1874 has now been repealed, so that no further authorities will be issued under that Act.

(ii.) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total areas of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1908 to 1912 inclusive :—

NEW SOUTH WALES.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1908-1912.

Purposes for which Issued or Occupied.	1901.	1908.	1909.	1910.	1911.	1912.
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LEASES AND LICENSES ISSUED.

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	2,272	4,131	5,243	6,412	3,708	3,584
Mining for other minerals ...	47,990	37,237	41,008	16,493	27,347	11,671
Authorities to prospect	...	38,890	25,481	8,107	11,569	183
For other purposes	87	1,160	964	662	241	110
Total	50,349	81,418	72,696	31,674	42,865	15,548

TOTAL AREAS OCCUPIED.

	6,942	11,456	16,079	18,917	15,455	15,531
Gold mining	6,942	11,456	16,079	18,917	15,455	15,531
Mining for other minerals ...	126,885	192,178	190,153	199,497	213,209	208,286
Authorities to prospect	...	13,239	28,287	12,441	...	139
For other purposes	382	2,058	1,746	4,380	4,366	4,570
Total	134,209	218,931	236,265	235,235	233,030	228,526

3. **Victoria.**—The occupations of Crown lands for mining and auxiliary purposes in this State is regulated by the Mines Act 1890-1907. The Department of Mines and Forests is authorised to issue mining leases (gold-mining, mineral, and dredging), and special license (searching, tailings, and water-right), while the issue of miners' rights, business licenses and residence areas is restricted to the Treasury Department. A description of the conditions governing the issue of these leases and licenses will be found in previous editions of the Year Book. (See Year Book No. 6, p. 308.)

Licenses of auriferous lands not for mining purposes may be issued by the Lands Department. (§ 7, 3 iv.)

Leases and Licenses Issued and Areas Occupied for Mining. Particulars of leases and licenses for mining purposes of Crown lands alone are not available, the official returns including also private lands. During the year 1912 the number of mining leases, licenses, etc., issued was 552, covering an area of 34,047 acres; the rent, fees, etc., received amounted to £2590. No particulars are available as to the total area of either Crown or private land occupied for mining purposes.

4. **Queensland.**—The occupation of the Crown lands for mining purposes in this State is regulated by the Mining Acts 1898 to 1902, and the Mining for Coal and Mineral Oil Act 1912. Under these Acts the Department of Mines is authorised to issue:— (i.) Miners' rights; (ii.) mining leases; (iii.) mining leases and licenses for coal and mineral oil; and (iv.) miners' homestead leases.

The conditions which govern the issue of miners' rights, mining leases, and miners' homestead leases are described in previous issues of the Year Book. (See Year Book No. 6, p. 309.)

Mineral leases for coal and mineral oil may be granted for a term of twenty-one years at an annual rent of sixpence an acre, together with a royalty according to the distance the lease is from a seaport or other place of delivery of twopence to threepence per ton of coal raised during the first five years of the lease and of fourpence to sixpence per ton during the remainder of the term. A lease for mineral oil with a maximum area of 30 acres may be granted for a term of 21 years at an annual rental of 6d. per acre, with a royalty of 5% of the value of all crude oil produced. Licenses to occupy not more than 2560 acres may be granted to any person desiring to prospect Crown lands for coal and mineral oil upon payment of one penny for every acre comprised in the application.

The "Mining on Private Land Act 1909," authorizes the granting of leases, etc. on and under private land, under conditions as to compensation, etc.

(i.) *Particulars of Leases and Licenses Issued, 1912.* The subjoined table gives particulars of the leases and licenses of Crown lands issued for mining purposes during the year 1912:—

QUEENSLAND.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT DURING YEAR 1912.

Lease or License.	Mining Leases.				Miners' Homestead Leases.	Coal Prospecting Licenses.	Miscellaneous Rights & Licenses.
Purpose for which issued	To mine for gold	To mine for minerals other than gold	Tramways	Buildings and machinery	Residence, business, etc.	To prospect for coal	Mining, residence, etc.
Area in acres...	918	3,172	...	26	6,092	40,575	*24,000

* Approximate.

(ii.) *Particulars of Areas Occupied.* The following table shews the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901 and from 1908 to 1912 inclusive:—

The particulars given are exclusive of miners' rights.

QUEENSLAND.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1908-1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
* LEASES AND LICENSES ISSUED DURING YEAR.						
Gold mining ...	Acres. 3,581	Acres. 1,800	Acres. 1,668	Acres. 1,306	Acres. 532	Acres. 918
Mining for other minerals ...	7,142	5,004	2,878	3,105	2,715	3,198
For other purposes ...	44,975	29,030	39,045	37,276	37,417	46,667
Total ...	55,698	35,834	43,591	41,687	40,664	50,783
* TOTAL AREA OCCUPIED AT END OF YEAR.						
Gold mining ...	11,296	8,860	8,590	8,082	7,820	6,884
Mining for other minerals ...	23,113	27,691	20,292	25,188	24,895	31,253
For other purposes ...	89,773	104,184	118,128	131,467	138,363	164,922
Total ...	124,182	140,735	147,010	164,737	171,078	203,059

* Exclusive of lands held under miners' rights only.

5. **South Australia.**—In this State leases and licenses for mining purposes are issued by the Department of Mines under the authority of the Mining Act 1893, as amended in 1900. Under these Acts mining and prospecting are permitted in virtue of (i.) miners' rights; (ii.) mining leases; (iii.) coal or oil leases; and (iv.) miscellaneous leases, and in addition occupation of Crown lands is permitted by virtue of (v.) business claims, and (vi.) occupation licenses.

The conditions which govern the issue of these various leases and licenses have been described in previous issues of the Year Book. (See Year Book No. 6, p. 311.)

(i.) *Particulars of Leases and Licenses, 1912.* The following table gives particulars of leases and licenses of Crown lands issued by the Mines Department during the year 1912:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING YEAR 1912.

Particulars.	Act under which Issued.	Purpose for which Issued.	Area.
			Acres.
Leases ...	Mining Act 1893 ...	To mine for— Gold and other metals and miner's	8,221
Mineral claims	" " " " " " " " " " " "	" " " " " " " " " " " "	11,160
Licenses ...	Mining Act Amendment Act 1900 ...	To "search for" "precious" stones, mineral phosphates, oil, rare metals, minerals, and earths, the mining for which has not proved payable in any portion of the State	240,000
Total ...	—	—	259,381

(ii.) *Leases and Licenses Issued and Areas Occupied.* The following table gives particulars of the areas of Crown lands for which leases and licenses were issued by the Mines Department during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1908 to 1912 inclusive:—

SOUTH AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1908 TO 1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
LEASES AND LICENSES ISSUED.*						
Gold mining	Acres. 1,377	Acres 306	Acres. 334	Acres. 145	Acres. 340	Acres. 480
Mining for other minerals	92,587	68,896	48,799	216,128	59,578	258,901
For other purposes	21	...	2	...	...	...
Total	93,985	69,202	49,135	216,273	59,918	259,381

TOTAL AREAS OCCUPIED.*

Gold mining	14,140	2,490	2,374	1,353	1,512	1,536
Mining for other minerals	...	97,780	81,311	196,256	87,459	290,667
For other purposes	...	117	108	105	106	117
Total	14,140	100,387	84,293	197,714	89,077	292,320

* Exclusive of miners' rights.

The following table shews the total area occupied (exclusive of miners' rights) at the end of the year 1912, classified according to the nature of the holding:—

SOUTH AUSTRALIA.—TOTAL AREA UNDER MINING ACTS, 1912.

Nature of Holding.	Number.	Area.	Nature of Holding.	Number.	Area.
		Acres.			Acres.
Mineral leases	252	12,101	Search licenses	130	240,000
Gold leases	76	1,424	Coal and oil claims	5	3,200
Gold dredging leases	1	100	Gold claims	5	12
Miscellaneous leases	57	15,369			
Mineral claims	531	19,997			
Occupation licenses	234	117	Total	1,291	292,320

6. *Western Australia.*—The issue of leases and licenses by the Mines Department is regulated by the Mining Act 1904. Under this Act Crown lands may be occupied by virtue of (i.) Miners' rights; (ii.) mining leases; and (iii.) miners' homestead leases.

The conditions governing the issue of these leases and licenses are described in previous issues of the Year Book. (See Year Book No. 6, p. 312.)

(i.) *Particulars of Leases and Licenses Issued, 1912.* The following table gives particulars of mining leases and licenses of Crown lands issued during 1912:—

WESTERN AUSTRALIA.—LEASES AND LICENSES ISSUED BY MINES DEPARTMENT, 1912.

Particulars.	Gold-Mining.	Minerals other than Gold.	Miners' Homesteads.	Miscellaneous.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.
Leases ...	10,207	2,775	8,120	52	21,154
Licenses ...	13,078	30,543	...	164	43,785

* Exclusive of miners' rights.

(ii.) *Particulars of Areas Occupied.* The following table shows the areas for which leases and licenses of Crown lands were issued during each year, and the total area occupied at the end of the year 1901, and from 1908 to 1912 inclusive:—

WESTERN AUSTRALIA.—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1908-1912.

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
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LEASES AND LICENSES ISSUED DURING YEAR.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining ...	17,454	26,898	32,092	32,365	47,385	23,285
Mining for other minerals ...	19,281	22,293	14,843	51,008	40,085	33,318
For other purposes ...	858	7,902	8,198	4 056	7,383	8,336
Total ...	37,593	57,093	55,133	87,429	94,853	64,939

* Exclusive of miners' rights.

TOTAL AREA OCCUPIED AT END OF YEAR.*

	40,525	40,591	41,521	44,157	44,163	33,737
Gold mining ...	14,091	55,244	45,229	78,838	70,944	62,998
Mining for other minerals ...	12,066	35,135	41,379	41,968	43,839	48,111
For other purposes ...	66,682	130,970	128,129	164,963	158,946	144,846
Total ...						

* Exclusive of miners' rights.

7. Tasmania.—Under the provisions of the Mining Act 1905, Crown lands in this State may be occupied for mining and auxiliary purposes by virtue of (i.) prospectors' licenses; (ii.) miners' rights; (iii.) mining leases; and (iv.) miscellaneous licenses. Business and residence licenses within mining areas may be issued by the Lands Department. (See § 7, 8 iv.)

A description of the conditions under which these leases and licenses are issued may be found in previous editions of the Year Book. (See Year Book No. 6, p. 314.)

(i.) *Particulars of Leases and Licenses Issued, 1912.* The following table shows particulars of leases and licenses of Crown lands, exclusive of prospectors' licenses and miners' rights, issued by the Mines Department during the year 1912 :—

TASMANIA,—LEASES AND LICENSES.

ISSUED BY THE MINES DEPARTMENT DURING 1912.*

Mineral.	No. of Ap- plications.	Area.	Mineral.	No. of Ap- plications.	Area.
		Acres.			Acres.
Asbestos ...	6	398	Silver ...	6	629
Clay ...	1	10	Tin ...	215	5,711
Coal ...	6	1,504	Wolfram ...	3	11
Copper... ..	18	762	Dredging claims ...	18	279
Gold ...	37	477	Machinery sites ...	4	21
Guano... ..	1	3	Mining easements...	13	114
Iron ...	2	96	Water rights ...	78	579
Limestone ...	2	325			
Minerals ...	58	3,001	Total... ..	468	13,920

1. Exclusive of prospectors' licenses and miners' rights, which are issued by officers in different districts throughout the State, and as to which particulars are not available.

(ii.) *Leases and Licenses Issued and Areas Occupied.* The following tables give particulars of the areas of Crown lands for which leases and licenses (exclusive of prospectors' licenses and miners' rights) were issued during each year, and of the total area of Crown lands occupied under such leases and licenses at the end of the year 1901 and from 1908 to 1912 inclusive :—

TASMANIA,—LEASES AND LICENSES.

ISSUED BY MINES DEPARTMENT, 1901 AND 1908 TO 1912.*

Particulars.	1901.	1908.	1909.	1910.	1911.	1912.
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LEASES AND LICENSES ISSUED.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	1,067	946	998	448	787	477
Mining for other minerals	17,058	19,137	19,114	23,669	25,316	12,729
For other purposes	—	463	302	56	401	714
Total	18,125	20,546	20,414	24,173	26,454	13,920

TOTAL AREAS OCCUPIED.*

	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Gold mining	3,394	1,344	1,265	1,159	1,220	1,344
Mining for other minerals	46,968	52,844	52,939	55,050	55,007	45,500
For other purposes	—	2,505	1,615	1,699	1,811	2,395
Total	50,362	56,693	55,819	57,908	58,038	49,239

* See note to preceding table.

§ 10. Resumption by Crown of Alienated Lands.

1. **General.**—Under various Acts, alienated lands may be compulsorily resumed by the Crown in the several States for certain purposes, generally connected with works of a public nature. Resumptions for closer settlement purposes have already been referred to (see § 1, above). In most of the States there are Lands Clauses or similar Acts providing the machinery, and indicating the procedure to be adopted in assessing the compensation to be paid by the Crown to private owners in cases where the parties have failed to agree as to the amount to be paid. The provisions of these Acts are generally incorporated in the special Acts specifying the purposes for which alienated lands may be resumed. Lands leased for pastoral purposes may generally be resumed by the Crown on short notice. The lessee is ordinarily entitled to compensation for land resumed, for loss or depreciation in value of the lease caused by such resumption, and for improvements.

(a) *New South Wales.* Alienated lands may be recovered by the Crown for authorised works and certain public purposes under the provisions of the Public Works Act 1900, and in other cases may be acquired by the Crown by purchase, gift, or surrender under Executive authority. Alienated lands required for public roads may be resumed under the Public Roads Act 1902, and if containing gold may be resumed for mining under Section 72 of the Mining Act 1906. Lands dedicated or granted by the Crown for public purposes may be resumed under Section 105 of the Crown Lands Act 1884, Section 41 of the Crown Lands Act 1889, and Section 1 of the Public Trusts Act 1897. Surrender and exchange of lands alienated or in process of alienation may be carried out under Section 47 of the Crown Lands Act 1895.

(b) *Victoria.* In Victoria lands may be resumed in accordance with the provisions of the Lands Compensation Act 1890, the Public Works Act 1890, the Railways Acts, the Land Act 1901, the Local Government Act 1903, the Water Act 1905, the Vacant Unclaimed Lands Act 1906, and the Forests Act 1907.

(c) *Queensland.* In this State alienated lands may be resumed under the provisions of the Public Works Land Resumption Act 1906, for any of the purposes specified in Section 4 of that Act.

(d) *South Australia.* In this State the principal Acts under which land is repurchased for public works are the Railways Commissioners Act 1887, the Water Conservation Acts 1886, 1889, and 1900, the Waterworks Act 1882, and the Sewers Act 1878.

(e) *Western Australia.* In Western Australia private lands may be resumed under the provisions of the Land Act 1898, the Roads Act 1902, and the Public Works Act 1902.

(f) *Tasmania.* The procedure for resuming land when required for road purposes is as follows:—

When provision is made by Parliament for a Public Works vote for any road, or when amount is available from other sources, such as under the Crown Lands Act (under which a proportion of the amount paid as purchase money is set aside for road purposes), application is made to the owner of the property through which the road is to pass. In most cases either land is given free or a price is agreed on between the owner and the officers of the Department. The purchase-money, with cost of necessary survey, is charged against the provision as referred to above, the land is surveyed and proclaimed under the provisions of the Lands Vesting Act. In case of it being impossible to settle the matter by arrangement with the owner, the land can be acquired by arbitration under the Lands Clauses Act, which is incorporated with the Public Works and Crown Lands

Acts, but since the passing of the Lands Resumption Act it is possible to acquire in a compulsory way without waiting for the usual formalities. Under this Act a notification is given to the owner, the land is surveyed, and then resumed by notification in the Gazette, on the publication of which the fee simple of the land vests at once in the Crown absolutely. The owner is then called upon to submit his claim, and the amount can be settled either by arbitration or by a court of competent jurisdiction in accordance with the provisions of the Lands Resumption Act. This procedure, that is, under the Lands Resumption Act, is now becoming much more general in cases where the land cannot be acquired by arrangement, and it is expected that the effect of the operation of the Act will be to the advantage of the Government and consequently to the public, in enabling land to be acquired more economically than under the former practice. The local bodies, that is, the municipalities, have also power to acquire land under the provisions of the Local Government Act, but in practice it has been found most convenient for the procedure to be carried out by the Public Works Department on behalf of the local bodies, and this insures the title being vested in the Crown, which gives uniformity of practice, and has also the effect that inquiry made as to title at the Government office shows at once the land that has been acquired.

2. Areas Resumed.—The subjoined table shews, so far as particulars are available, the areas of private lands resumed, exclusive of resumptions for closer settlement purposes, in each State during 1901 and 1908-12:—

AREAS OF PRIVATE LANDS RESUMED BY THE CROWN

(EXCLUSIVE OF RESUMPTIONS FOR CLOSER SETTLEMENT), 1901 AND 1908-12.

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901 ...	7,864	52	26	†	91	120	8,153
1908 ...	6,041	†	1,946	†	2,457	16	†
1909 ...	3,020	†	122	†	†	212	†
1910 ...	3,878	†	92	†	†	544	†
1911 ...	2,169	†	...	†	†	690	†
1912 ...	2,021	†	123	†	†	†	†

* Exclusive of resumptions for railway purposes, which for the years 1901 to 1906, inclusive, amounted to 13,081 acres. † Not available. ‡ Exclusive of South Australia.

§ 11. Alienation and Occupation of Crown Lands in the Several States.

1. Introduction.—The tables given in the previous parts of this section shew separately the areas alienated, in process of alienation, and occupied under various tenures in the several States. The tables given below shew collectively the general condition of the public estate in each State, having regard to (a) the area alienated absolutely, which includes free grants, sales, and conditional purchases for which grants have been issued, the conditions having been complied with; (b) the area in process of alienation, comprising holdings for which the fee-simple has not yet been alienated, but which are in process of sale under systems of deferred payments; (c) the area occupied under all descriptions of leases and licenses; and (d) the area unoccupied, which, ordinarily, includes roads, permanent reserves, forests, etc. In some cases, however, lands which are permanently reserved from alienation are occupied under leases and licenses, so that

in such cases the areas reserved are comprised in class (c) and not in class (d). Particulars of leases and licenses of reserved areas, as distinguished from leases and licenses of other lands, are not available. It should be observed that in many cases lands occupied under leases or licenses for pastoral purposes are held on short tenures only, and could thus be made available for settlement practically whenever required.

2. New South Wales.—The total area of the State of New South Wales (exclusive of Commonwealth Territory) is 198,054,420 acres, of which on the 30th June, 1913, 39,584,685 acres, or nearly one-fifth, were alienated absolutely; 18,233,338 acres, or over one-eleventh were in process of alienation; 124,590,163 acres, or about three-fifths, were occupied under Lands Department, Western Land Board, or Mines Department leases and licenses; and the remaining 15,648,234 acres, or about one-eleventh, were unoccupied. The next table shows the areas alienated, in process of alienation, held under leases and licenses, and unoccupied, in 1901 and from 1909-10 to 1912-13.

During the year 1912-13, a total area of 1,839,837 acres became available for homestead selection, and settlement lease, Crown leases, homestead farms and suburban and additional holdings. Of this area, 28,693 acres were made available for irrigation farms, 765 acres for settlement purchase, and 107,791 acres were acquired under the Closer Settlement Promotion Act.

**NEW SOUTH WALES.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1909-1913.***

Particulars.	Area in Acres.				
	1901.	1909-10.	1910-11.	1911-12.	1912-13.
1. Alienated.					
Granted and sold by private tender and public auction, at prices ranging from five to twenty shillings per acre, prior to 1862 ...	7,146,579	7,146,579	7,146,579	7,146,579	7,146,579
Sold by auction and others sales, 1862 to date ...	14,638,868	14,897,415	14,903,655	14,909,311	14,912,708
Conditionally sold, 1862 to date ...	4,212,189	13,928,053	14,560,791	15,232,355	15,638,374
Granted under Volunteer Land Regulations, 1867 to date ...	168,545	170,114	170,650	171,498	171,998
Granted for public and religious purposes ...	241,968	228,712	230,907	232,822	234,192
Homestead grants ...	35,385	1,628,176	1,729,154	1,518,703	1,480,834
Total area alienated ...	26,443,554	†37,999,049	138,741,736	39,211,268	39,584,685
2. In Process of Alienation.					
Under system of deferred payments ...	20,044,703	14,362,463	15,614,036	16,529,008	17,305,305
Under system of homestead selections (including leases converted, but excluding grants issued) ...	1,550,985	622,903	§	§	§
Closer settlement purchases ...	...	475,553	596,149	812,426	928,033
Total area in process of alienation ...	21,595,688	15,460,919	16,210,185	17,341,434	18,233,338
3. Held under Leases and Licenses.					
Total under Lands Department and Western Land Board ...	126,921,161	125,491,878	122,998,519	125,827,179	124,361,637
Mineral and auriferous leases and licenses (Mines Department) ...	134,209	‡241,752	‡225,040	236,852	228,526
Total leases under all Government Departments ...	127,055,370	125,733,630	123,223,559	126,064,031	124,590,163
4. Unoccupied ...	23,543,468	19,444,482	20,462,600	15,437,687	15,646,234

Area of State (exclusive of Commonwealth Territory)—198,054,420 acres.

* The figures for 1901 are up to the 31st December, while for the other years given they are up to the 30th June. † Includes 495,052 acres acquired for closer settlement. ‡ Inclusive of alienated area within the Commonwealth Territory, and acquisitions under Closer Settlement Acts. § Now included under Homestead grants. ¶ Up to 31st December.

3. **Victoria.**—The total area of the State of Victoria is 56,245,760 acres, of which 23,856,389 acres, or about three-eighths, had been alienated absolutely up to the end of the year 1912; 7,198,531 acres, or about one-eighth, were in process of alienation under deferred payments; and 14,443,191 acres were occupied under leases and licenses, while the remaining 10,747,649 acres were unoccupied. The following table shews the areas alienated and in process of alienation, together with the areas reserved, leased, and available for occupation at the end of the year 1901 and from 1908 to 1912 :—

VICTORIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1908-1912.

Particulars.	Area in Acres					
	1901.	1908.	1909.	1910.	1911.	1912.
1. <i>Alienated</i>	20,066,875	23,074,634	23,107,613	23,568,070	23,727,962	23,856,389
2. <i>In Process of Alienation</i> —						
Exclusive of Mallee, etc. ...	3,587,668	1,941,474	2,017,219	*2,079,977	1,953,268	1,932,189
Mallee Lands	87,606	2,728,595	3,077,067	3,493,952	4,076,792	4,838,583
Under Closer Settlement Acts ...	...	174,812	190,784	221,565	303,024	397,402
Village Settlements	55,077	45,140	42,645	39,276	31,911	30,057
Total	3,730,351	4,890,021	5,327,715	5,834,772	6,364,995	7,198,531
3. <i>Leases and Licenses Held</i> —						
Under Lands Department ...	17,110,709	15,955,346	16,584,395	15,433,875	14,719,149	14,443,191
Under Mines Department† ...	...	...	...	...	...	...
4. <i>Unoccupied Crown Lands</i> ...	15,337,825	12,325,759	11,426,057	11,409,043	11,433,654	10,747,649

Total area of State—56,245,760 acres.

* Including 187,778 acres which, having reverted to the Crown in March, 1911, are now included in Mallee Lands. † Not available.

Crown lands in Victoria include roads, 1,708,824 acres; water reserves, 315,748 acres; agricultural colleges, etc., 85,107 acres; State forests and timber reserves (now under Forests Act 1907), 3,825,946 acres; State forests and timber reserves under Land Acts, 268,480 acres; reserves in the Mallee, 397,881 acres; unsold land in towns, etc., 1,754,255 acres; and other reserves, 299,300 acres. The Crown Lands Reserve Act was passed in 1910; it revokes permanent reserves for public purposes, in order that the areas totalling 1,591,500 acres may be dealt with as unoccupied Crown lands. Of these lands 1,195,000 acres are mallee country situated in the county of Millewa, while the remainder, 396,500 acres, are situated in the counties of Dargo and Croajingolong in the eastern part of the State.

4. **Queensland.**—The total area of this State is 429,120,000 acres, of which, on the 31st December, 1912, 15,874,202 acres, or about one-twenty-seventh, were alienated absolutely; 9,577,037 acres, or about one-forty-fifth, were in process of alienation; 317,615,144, or nearly three-quarters, were occupied under leases and licenses; roads, reserves, etc., occupied 15,471,446 acres, the remaining 70,682,171 acres being unoccupied. From 1901 to 1912 the area alienated absolutely increased by 2,340,734 acres or 17½ per cent., and the area in process of alienation by 6,785,373 acres or 243 per cent.

The following table shews the area alienated absolutely, the area in process of alienation, and the area held under various forms of lease and license at the end of the year 1901 and from 1908 to 1912 :—

**QUEENSLAND.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1908-1912.**

Particulars.	Area in Acres.					
	1901.	1908.	1909.	1910.	1911.	1912.
<i>1. Alienated Absolutely—</i>						
By Purchase	13,462,304	15,026,180	15,214,148	15,377,626	15,626,173	15,790,907
Without Payment	71,164	82,259	82,540	82,726	83,013	83,295
Total	13,533,468	15,108,439	15,296,688	15,460,352	15,709,186	15,874,202
<i>2. In Process of Alienation</i>	2,791,664	6,200,960	6,806,467	7,971,342	9,025,049	9,577,037
<i>3. Occupied under Leases and Licenses—</i>						
Runs Settled Districts	176,000	201,872,640	209,143,600	218,142,640	222,158,880	227,410,480
„ Unsettled Districts	222,553,760					
Occupation Licenses	35,103,600	40,039,040	38,062,240	37,834,960	43,478,880	42,465,360
Grazing Farms and Homesteads	21,793,242	30,888,705	35,250,197	38,460,439	42,130,631	47,179,483
Scrub Selections	272,946	258,208	273,102	235,150	234,435	233,436
Leases Special Purposes	249	8,037	32,722	57,782	45,000	88,147
Under Mines Department	124,182	140,735	147,010	187,156	140,021	203,059
Perpetual Lease Selections	...	...	...	...	18,089	35,179
Total	280,023,979	273,207,365	282,908,871	294,918,129	308,205,936	317,615,144
<i>4. Roads and Reserves</i>	...	...	...	...	14,828,256	15,371,446
<i>5. Unoccupied</i>	132,770,889	134,603,266	124,107,974	110,870,177	81,351,573	70,682,171

Total area of State—429,120,000 acres.

The area open for selection (as distinguished from occupation for purely pastoral or special purposes) under every mode at the beginning of the year 1912 was 6,583,732 acres, and the area opened during the year was 10,865,397 acres, while the area withdrawn was 1,687,448 acres. The area selected was 6,976,745 acres, and the area remaining open at the end of the year was 8,804,936 acres. The number of grazing selections was 571 as against 414 in the previous year, and their gross area 4,695,807 acres, as against 4,488,712 acres.

5. South Australia.—The area of the State of South Australia is 243,244,800 acres. In South Australia, at the end of the year 1912, there were 10,252,746 acres, or about one twenty-fourth, alienated absolutely; 1,782,451 acres, or about one one-hundred and thirty-sixth, were in process of alienation; 115,829,476 acres, or about one-half were occupied under leases and licenses; while the remaining 115,380,127 acres were unoccupied. From 1901 to the end of 1911, the area of land absolutely alienated has increased by upwards of three million acres, or over 36 per cent., while, during the same period, the area of land in process of alienation has increased by upwards of two million acres, or over 220 per cent. The subjoined table shews for South Australia the area of land alienated absolutely, and in process of alienation under deferred payments, and the area held under different forms of leases:—

SOUTH AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1908-1912.

Particulars.	Area in Acres.					
	1901.	1908.	1909.	1910.	1911.	1912.
1. Alienated—						
Sold	7,413,510	8,341,566	8,598,751	9,146,396	9,769,993	10,129,969
Granted for Public Purposes ...	121,613	122,065	72,123	122,393	122,604	122,777
Total	7,535,123	8,463,631	8,670,874	9,268,789	9,892,597	10,252,746
2. In Process of Alienation—	553,774	1,195,550	1,297,277	1,463,038	1,761,442	1,782,451
3. Held under Lease and License—						
Right of Purchase	5,639,519	4,424,814	4,232,009	3,697,423	3,150,533	2,836,346
Perpetual	7,115,782	13,269,290	14,088,223	14,789,305	15,020,544	15,070,607
Pastoral	68,916,125	83,009,650	87,038,450	91,434,450	91,546,770	96,356,850
Other Leases and Licenses ...	3,905,729	1,812,959	1,513,032	1,394,964	1,283,663	1,273,350
*Mining " "	14,140	100,387	84,293	197,714	89,077	292,323
Total	85,591,295	102,617,100	106,956,007	111,513,856	111,090,587	115,829,476
4. Total Occupied	93,680,192	112,276,281	116,924,158	122,245,683	122,744,626	127,864,673
5. Area Unoccupied	149,564,608	130,968,519	126,320,642	120,969,117	120,500,174	115,380,127

Total area of State—243,244,800 acres.

* Exclusive of miners' rights.

6. Western Australia.—The total area of Western Australia is 624,588,800 acres, of which on the 30th June, 1913, 7,606,759 acres, or about a one-eighty-fifth part, were alienated absolutely; 13,755,787 acres, or about one-forty-seventh part, were in process of alienation; while 188,547,418 acres, a little more than a quarter, were occupied under leases and licenses issued either by the Lands or the Mines Departments. The remaining 414,678,836 acres, or about two-thirds, were unoccupied.

The following table shows the area alienated absolutely and conditionally, and the areas held under leases and licenses at the end of the years 1901 and on 30th June, 1909 to 1913:—

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1909-1913.

Particulars.	Area in Acres.					
	1901.	1908-9.*	1909-10.*	1910-11.*	1911-12.*	1912-13.*
1. Absolutely Alienated	3,468,878	4,343,808	4,449,329	7,202,696	7,387,929	7,606,759
2. In Process of Alienation—						
Midland Railway Concessions ...	2,768,810	2,686,521	2,686,521	121,800	121,800	121,800
Free Homestead Farms	283,455	1,208,023	1,366,066	1,454,275	1,531,424	1,547,817
Conditional Purchases... ..	1,349,554	4,855,747	6,067,901	7,305,932	8,285,058	8,294,524
Selections from the late W.A. Company	75,213	43,247	38,628	33,259	16,413	12,716
Selections under the Agricultural Lands Purchase Act ...	37,235	180,313	202,059	250,646	253,588	261,517
Special Occupation Leases and Licenses	8,867	3,353	2,805	2,404	2,110	2,010
Homestead or Grazing Leases ...	286,425	2,278,714	2,433,341	2,592,043	3,115,727	3,442,557
Poison Land Leases or Licenses	1,306,270	85,303	82,019	82,019	78,426	72,194
Immigrants' Grants	400	100	100	100	100	...
Village Allotments	6	36	36	36	35	35
Working-men's Blocks... ..	31	667	719	722	688	617
Total in Process of Alienation	6,116,266	11,342,024	12,880,195	11,843,236	13,405,369	13,755,787

WESTERN AUSTRALIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1909-1913.—Continued.

Particulars.	Area in Acres.					
	1901.	1908-9.*	1909-10.*	1910-11.*	1911-12.*	1912-13.*
3. Leases and Licenses in Force—						
(i.) <i>Issued by Lands Department</i>						
Pastoral Leases	96,508,549	162,277,805	165,463,185	167,933,347	173,431,848	183,477,495
Special Leases	448	31,300	24,780	26,710	33,157	34,442
Leases of Reserves	5,296	219,582	475,901	572,400	630,137	3,402,605
Selections in Goldfields ...	3,955	100	100	100	100	100
Timber Leases and Licenses	865,180	916,386	1,143,572	1,304,282	1,423,282	775,769
Timber Permits						761,790
Residential Lots	550	599	534	468	405	318
(ii.) <i>Issued by Mines Department</i>						
Gold Mining Leases... ..	34,066					
Mineral Leases	6,576	†130,970	†128,129	†100,337	158,946	94,899
Other Leases	8,623					
Licenses	17,397					
Total under Leases and Licenses	97,450,660	163,576,742	167,236,201	169,937,644	175,677,865	188,547,418
4. Area Unoccupied ...	517,552,996	445,326,226	440,023,075	435,605,224	248,117,637	414,678,836

Total area of State—624,588,800 acres.

* Figures are now given as up to the 30th June, instead of as up to 31st December. Figures for previous years may be obtained from the Statistical Registers of Western Australia. † On the 31st December, 1908. ‡ On the 31st December.

7. Tasmania.—Of the total area of Tasmania, namely, 16,777,600 acres, there were at the end of the year 1912, 5,005,175 acres, or about three-tenths, alienated absolutely; 1,310,728 acres, or about one-thirteenth, were in process of alienation; 1,642,352 acres, or about one-tenth, were occupied under leases and licenses for either pastoral, agricultural, timber, or mining purposes; the remaining 8,819,345 acres, or about one-half, being unoccupied. The following table shews the areas alienated, in process of alienation, and held under lease or license, and the area unoccupied at the end of the year 1901 and from 1908 to 1912:—

TASMANIA.—ALIENATION AND OCCUPATION OF CROWN LANDS, 1901 and 1908 to 1912.

Particulars.	Area in Acres.					
	1901.	1908.	1909.	1910.	1911.	1912.
1. Alienated Absolutely	4,621,585	4,848,058	4,890,000	4,932,276	4,965,331	5,005,175
2. In Process of Alienation	272,376	870,088	1,006,642	1,104,379	1,274,947	1,310,728
3. Leases or Licenses						
(i.) <i>Issued by Lands Department—</i>						
Islands	149,165	103,130	90,100	87,100	62,000	135,025
Ordinary Leased Land ...	1,280,688	1,235,823	1,173,823	1,176,900	1,242,400	1,245,400
Land Leased for Timber ...	40,768	91,972	100,098	108,889	134,516	136,471
Closer Settlement	—	18,156	27,657	29,726	34,841	46,217
(ii.) <i>Issued by Mines Department</i>						
	50,362	56,693	55,819	57,908	44,953	79,239
Total	1,520,983	1,505,774	1,447,497	1,460,523	1,518,710	1,642,352
4. Total Area Occupied	6,414,944	7,223,920	7,344,139	7,497,178	7,758,988	7,958,255
5. Area Unoccupied	10,362,656	9,553,680	9,433,461	9,280,422	9,018,612	8,819,345

Total area of State—16,777,600 acres.

8. **Northern Territory.**—On the 1st January, 1911, the Northern Territory was taken over by the Commonwealth. In the Northern Territory at the end of the year 1912, there were 473,990 acres, or only about one seven-hundred-and-seventh part alienated absolutely; 96,026,438 acres, or nearly two-sevenths, were held under leases and licenses: while the remaining 238,616,372 acres, or about five-sevenths, were unoccupied. The following table shews the area of land alienated absolutely, and also the area under lease:—

**NORTHERN TERRITORY.—ALIENATION AND OCCUPATION OF CROWN LANDS,
1901 and 1908-1912.**

Particulars.	Area in Acres.					
	1901.	1908.	1909.	1910.	1911.	1912.
1. Alienated—						
Sold	473,230	473,761	473,761	473,942	474,147	473,942
Granted for Public Purposes ...	48	48	48	48	48	48
Total Alienated	473,278	473,809	473,809	473,990	474,195	473,990
2. Leased—						
Right of Purchase	1,067	2,931	5,224	667	667	667
Pastoral	111,476,240	102,123,040	95,559,840	98,729,120	100,522,240	94,329,600
Other Leases	1,176,961	1,293,457	512,650	445,236	385,277	1,696,171
Total Leased	112,654,288	103,419,428	96,077,714	99,175,023	100,908,184	96,026,438
3. Total Occupied	113,127,566	103,893,237	96,551,523	99,649,013	101,382,379	96,500,428
4. Remainder Unoccupied ...	221,969,234	231,223,563	238,565,277	235,467,787	233,734,421	238,616,372

Total area of Northern Territory—335,116,800 acres.

§ 12. Classification of Holdings according to Size.

1. **General.**—The classification of holdings according to their area is of interest chiefly in relation to the efforts made by the several States in recent years to promote settlement on the land on blocks of suitable size, especially by means of the Closer Settlement Acts. Returns shewing such a classification are not available for Queensland and the Northern Territory.

A table shewing the movement of land consequent on the operation of the Commonwealth Land Tax Act of 1910, can be found in the section dealing with Commonwealth Finance.

The following table gives particulars of the number and aggregate area of holdings of lands alienated and in process of alienation in area series, as returned to the collectors of agricultural statistics, for all the States excepting Queensland and the Northern Territory for the season 1912-13:—

CLASSIFICATION OF HOLDINGS (ONE ACRE AND OVER) IN AREA SERIES, 1912-13.

Size of Holdings.	N.S.W.	Victoria.	S. Aust.	W. Aust.	Tasmania.	Federal Territory	Total.
NUMBER.							
Acres.							
1 to 50	38,641	18,757	6,909	3,656	4,752	36	72,751
51 " 100	8,955	7,356	1,724	609	2,378	32	21,054
101 " 500	26,251	24,735	5,691	3,320	5,161	90	65,248
501 " 1,000	8,616	10,181	3,590	3,465	705	30	26,587
1,001 " 5,000	7,287	5,364	3,075	3,545	634	43	19,948
5,001 " 10,000	853	267	100	213	123	2	1,567
10,001 " 20,000	379	116	48	82	62	2	689
20,001 " 50,000	245	34	22	28	28	4	361
50,001 and over	86	1	...	7	1	...	95
Total...	91,313	66,811	21,168	14,925	13,844	239	208,300

AREA.

Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1 to 50	504,984	356,959	113,122	42,754	75,114	591	1,093,524
51 " 100	707,449	558,534	132,583	52,613	162,506	2,481	1,616,166
101 " 500	6,682,999	6,359,230	1,617,961	916,900	1,043,191	22,585	16,642,866
501 " 1,000	6,020,172	7,123,402	2,547,345	2,804,467	477,210	22,460	18,995,056
1,001 " 5,000	14,410,615	9,552,404	5,196,631	6,969,833	1,325,074	78,675	37,523,232
5,001 " 10,000	5,859,049	1,825,862	746,397	1,456,456	851,102	15,790	10,754,656
10,001 " 20,000	5,206,019	1,609,045	656,659	1,155,013	852,499	35,534	9,514,769
20,001 " 50,000	7,103,057	992,521	642,254	822,823	731,539	116,213	10,408,407
50,001 and over	7,501,515	51,400	...	606,495	258,898	...	8,418,306
Total...	53,995,850	28,420,357	11,652,952	14,817,354	5,777,133	294,329	114,966,964

2. **New South Wales.**—The total number of holdings of one acre and over in area in this State on the 31st March, 1901, was 69,439. On the 31st March, 1913, the corresponding number was 91,313, shewing an increase of about 30 per cent. The following table shews the number of holdings of land alienated and in process of alienation, on the 31st March, 1901, and from 1908 to 1913:—

NEW SOUTH WALES.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1901 and 1908-1913.

Size of Holdings.	1901.	1908.	1909.	1910.	1911.	1912.	1913.
Acres.	Number.	Number.	Number.	Number.	Number.	Number.	Number.
1 to 50	28,155	34,833	35,345	36,288	37,272	38,211	38,641
51 " 100	8,929	9,136	9,105	9,173	9,159	9,027	8,955
101 " 500	20,504	23,652	24,069	24,672	25,322	25,964	26,251
501 " 1,000	6,105	7,203	7,321	7,632	7,911	8,329	8,616
1,001 " 5,000	4,464	5,542	5,796	5,991	6,395	6,934	7,287
5,001 " 10,000	579	638	691	711	738	825	853
10,001 " 20,000	352	368	358	348	344	371	379
20,001 " 50,000	202	256	257	264	287	247	245
50,001 and over	149	104	103	99	95	84	86
Total	69,439	81,732	83,045	85,178	87,503	89,992	91,313

3. **Victoria.**—Lands alienated absolutely and in process of alienation in this State were classified according to size in 1906, 1908, 1910, and 1912. The following table shews the number and area of holdings of such lands on the 1st March of those years:—

**VICTORIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1906-1912.**

Size of Holdings.				1906.	1908.	1910.	1912.
Acres.				Number.	Number.	Number.	Number.
1 to	50	...	...	13,309	14,692	16,609	18,757
51 "	100	...	...	5,864	6,223	6,696	7,356
101 "	500	...	...	21,628	22,510	23,397	24,735
501 "	1,000	...	...	7,688	7,817	8,216	10,181
1,001 "	5,000	...	...	4,083	4,409	4,908	5,364
5,001 "	10,000	...	...	220	231	239	267
10,001 "	20,000	...	...	116	118	131	116
20,001 "	50,000	...	...	73	61	42	34
50,001 and over		...	...	6	4	2	1
Total				52,987	56,065	60,240	66,811

4. **South Australia.**—In the State of South Australia the number of holdings of alienated lands, and lands in process of alienation, was available for the first time in 1910-11. The following table shews the number and area of such holdings for 1910-11, 1911-12 and 1912-13:—

**SOUTH AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF
ALIENATION, 1910-11, 1911-12 and 1912-13.**

Size of Holdings.				1910-11.	1911-12.	1912-13.
Acres.				Number.	Number.	Number.
1 to	50	...	...	6,745	6,823	6,909
51 "	100	...	...	1,646	1,728	1,724
101 "	500	...	...	5,542	5,729	5,691
501 "	1,000	...	...	3,370	3,538	3,590
1,001 "	5,000	...	...	2,540	2,844	3,075
5,001 "	10,000	...	...	110	118	109
10,001 "	20,000	...	...	53	52	48
20,001 "	50,000	...	...	23	21	22
50,001 and over		...	...	1	1	...
Total				20,030	20,854	21,168

5. **Western Australia.**—In this State the number of holdings of one acre and over in area was 5699 for the season 1900-1 (see Year Book No. 1), and 14,925 for the season 1911-12, shewing an increase of 7926, or about 150 per cent. The subjoined table shews the number of holdings of land alienated, and in process of alienation, for 1901 and 1909-1913:—

WESTERN AUSTRALIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1901 and 1909-13.

Size of Holdings.				1900-1.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Acres.				Number.	Number.	Number.	Number.	Number.	Number.
1 to	50	...	...	1,728	3,061	3,078	3,135	3,274	3,656
51	100	...	...	198	510	517	549	571	609
101	500	...	...	2,302	3,314	3,318	3,212	3,171	3,320
501	1,000	...	...	717	2,038	2,320	2,777	3,024	3,465
1,001	5,000	...	...	607	1,848	2,200	2,616	2,967	3,545
5,001	10,000	...	...	73	158	170	189	200	213
10,001	20,000	...	...	38	71	88	79	77	82
20,001	50,000	...	...	36*	25	29	24	26	28
50,001 and over		...	...	...	6	6	7	6	7
Total				5,699	11,031	11,726	12,588	13,316	14,925

* Including all holdings of 20,001 acres and upwards.

6. **Tasmania.**—In Tasmania the total number of holdings of land alienated and in process of alienation on the 1st March, 1909, was 12,413. Particulars for previous years are not available. The following table shews the classification of such holdings in area series for each year from 1908-9 to 1912-13 :—

TASMANIA.—NUMBER OF HOLDINGS ALIENATED AND IN PROCESS OF ALIENATION, 1908-9 to 1912-13.

Size of Holdings.				1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Acres.				Number.	Number.	Number.	Number.	Number.
1 to	50	...	...	4,301	4,526	4,596	4,624	4,752
51	100	...	...	2,277	2,341	2,334	2,413	2,378
101	500	...	...	4,486	4,784	4,957	5,036	5,161
501	1,000	...	...	585	624	675	669	705
1,001	5,000	...	...	572	588	589	621	634
5,001	10,000	...	...	108	116	119	117	123
10,001	20,000	...	...	57	61	51	60	62
20,001	50,000	...	...	24	26	26	31	28
50,001 and over		...	...	3	2	2	2	1
Total				12,413	13,068	13,349	13,573	13,844

13. The Progress of Land Settlement, 1901 to 1912.

1. **Recent Progress.**—The progress of settlement and the growth of land alienation in the States of the Commonwealth under recent legislation is seen in the subjoined statement, which shews concisely the condition of the public estate in each State and in the Commonwealth, at the end of 1901 and of each year from 1908 to 1912 inclusive. The effect of the land laws during that period has been generally to diminish the number of large holdings, at the same time decreasing the area held under lease, while both the area alienated and the area in process of alienation have increased. As leases of large areas fall in or are otherwise terminated they are in many cases not renewed, but the land leased is cut up for the purpose of settlement under systems of deferred payment; the

State Governments, also, have in many cases acquired by repurchase considerable areas under the provisions of the various Closer Settlement Acts. Further, greater facilities have been granted to the working classes to acquire possession of the soil, and special inducements have been offered to *bona fide* settlers by the introduction of new forms of tenure on easy terms and conditions.

From 1901 to 1912 the area alienated absolutely in the whole Commonwealth increased by 26,603,938 acres, or 35 per cent.; the area in process of alienation increased by 16,917,332 acres, or 48 per cent; the area leased by 137,524,801 acres, or 19 per cent.; while the area unoccupied decreased by 181,046,071 acres, or 20 per cent.

TOTAL AREA ALIENATED, IN PROCESS OF ALIENATION, HELD UNDER LEASE OR LICENSE, AND UNOCCUPIED.

EXPRESSED ABSOLUTELY AND AS PERCENTAGES OF AREA OF ENTIRE STATE
FOR THE YEARS 1901 AND 1908-12.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
NEW SOUTH WALES.—AREA, 198,054,420 ACRES.								
1901†	26,443,554	13.32	21,595,688	10.87	127,055,370	63.96	23,543,468	11.85
1908	35,467,021	17.85	15,798,047	7.95	129,150,578	65.02	18,222,434	9.18
1909	36,783,741	18.52	15,217,891	7.66	128,390,868	64.63	18,245,380	9.19
1910	37,999,049	19.13	15,460,919	7.78	125,733,630	63.30	19,444,482	9.79
1911	38,741,736	19.50	16,210,185	8.16	123,223,559	62.04	20,462,600	10.30
1912†	39,211,268	19.75	17,341,434	8.75	126,064,081	63.65	15,437,687	7.85
1913†	39,584,685	19.98	18,233,338	9.21	124,590,163	62.91	15,646,234	7.90

VICTORIA.—AREA, 56,245,760 ACRES.

1901	20,066,875	35.67	3,730,351	6.63	17,110,709	30.42	15,337,825	27.28
1908	23,074,634	41.03	4,890,021	8.69	15,955,346	28.36	12,325,759	21.92
1909	23,107,613	41.08	5,358,496	9.53	16,384,395	29.13	11,395,256	20.26
1910	23,568,070	41.90	5,869,185	10.43	15,433,875	27.45	11,374,630	20.22
1911	23,727,962	42.18	6,364,995	11.31	14,719,149	26.34	11,433,654	20.17
1912	23,856,389	42.41	7,198,531	12.79	14,443,191	25.67	10,747,649	19.13

QUEENSLAND.—AREA, 429,120,000 ACRES.

1901	13,533,468	3.15	2,791,664	0.65	280,023,979	65.26	132,770,889	30.94
1908	15,108,439	3.52	6,200,930	1.45	273,307,365	63.69	134,503,266	31.34
1909	15,296,688	3.56	6,806,467	1.59	283,023,871	65.95	123,992,974	28.90
1910	15,460,352	3.60	7,971,342	1.86	295,385,129	68.84	110,303,177	25.70
1911	15,709,186	3.66	9,025,049	2.10	308,205,936	71.82	96,179,829	22.42
1912	15,874,202	3.69	9,577,037	2.23	317,615,144	74.01	86,053,617	20.07

SOUTH AUSTRALIA.—AREA, 243,244,800 ACRES.

1901	7,535,123	3.10	553,774	0.23	85,591,295	35.18	149,564,608	61.49
1908	8,463,631	3.48	1,195,550	0.49	102,617,100	42.20	130,968,519	53.83
1909	8,670,874	3.56	1,297,277	0.53	106,956,007	43.97	126,320,642	51.94
1910	9,268,789	3.81	1,463,038	0.60	111,513,856	45.80	120,999,117	49.79
1911	9,892,597	4.07	1,761,442	0.72	111,090,587	45.67	120,500,174	49.54
1912	10,252,746	4.22	1,782,451	0.73	115,829,476	47.62	115,380,127	47.43

* Including roads and reserves. † To 31st December; subsequent years to 30th June.

‡ Exclusive of Commonwealth Territory.

TOTAL AREAS ALIENATED, IN PROCESS OF ALIENATION, ETC.—Continued.

Year.	Alienated.		In Process of Alienation.		Held under Lease or License.		Occupied by the Crown or Unoccupied.*	
	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.	Area in Acres.	Per Cent.
WESTERN AUSTRALIA.—AREA, 624,588,800 ACRES.								
1901	3,468,878	0.56	6,116,266	0.98	97,450,660	15.60	517,552,996	82.86
1908 ¹	4,258,190	0.68	9,744,748	1.56	161,255,897	25.82	449,329,965	71.94
1909 ¹	4,343,808	0.70	11,342,024	1.81	163,576,742	26.19	445,326,226	71.30
1910 ¹	4,449,329	0.71	12,880,195	2.06	167,236,201	26.78	440,023,075	70.45
1911 ¹	7,202,696	1.15	11,843,236	1.90	169,937,644	27.21	435,605,224	69.74
1912 ¹	7,387,929	1.18	13,405,369	2.16	175,677,865	28.13	428,117,637	68.53
1913 ¹	7,606,759	1.21	13,755,787	2.20	188,547,418	30.18	414,678,836	66.41

1. To 30th June.

TASMANIA.—AREA, 16,777,600 ACRES.

1901	4,621,585	27.54	272,376	1.62	1,520,983	9.06	10,362,656	61.78
1908	4,848,058	28.90	870,088	5.19	1,505,774	8.97	9,553,680	56.94
1909	4,890,000	29.15	1,006,642	6.00	1,457,497	8.68	9,423,461	56.17
1910	4,932,276	29.40	1,104,379	6.58	1,460,523	8.71	9,280,422	55.31
1911	4,965,331	29.60	1,274,947	7.60	1,518,710	9.05	9,018,612	53.75
1912	5,005,175	29.83	1,310,728	7.82	1,642,352	9.78	8,819,345	52.57

NORTHERN TERRITORY.—AREA, 335,116,800 ACRES.

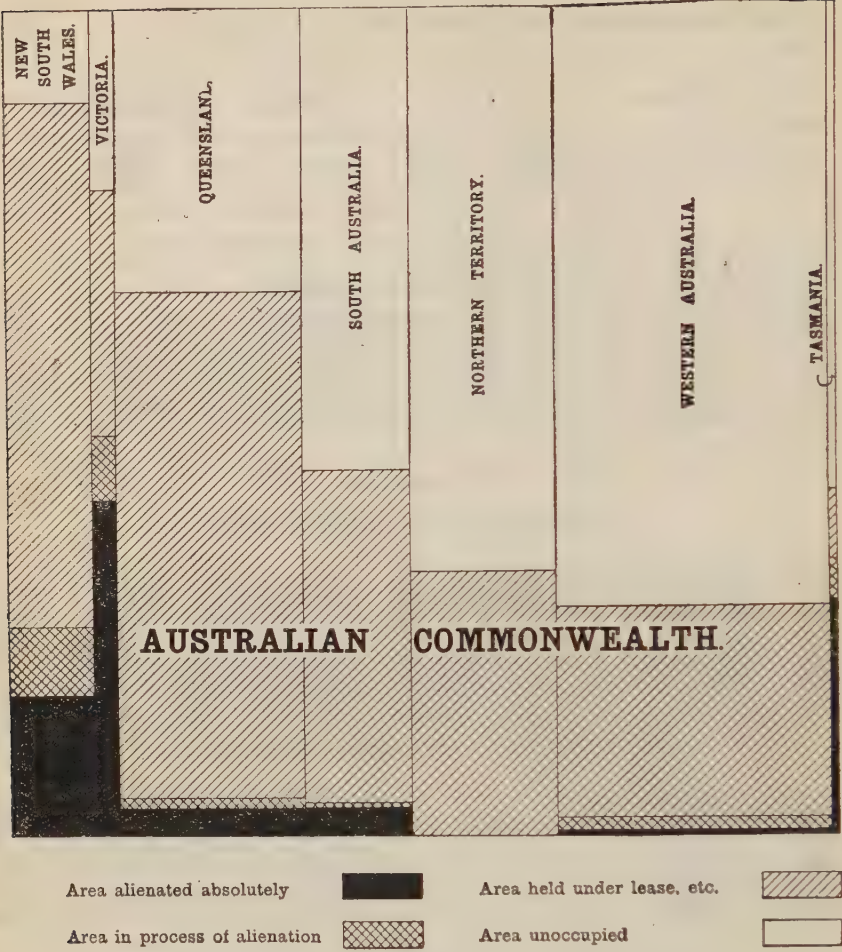
1901	473,278	0.14	...	...	112,654,288	33.62	221,989,234	66.24
1908	473,889	0.14	...	...	103,419,428	30.86	231,223,563	69.00
1909	473,809	0.14	...	...	96,077,714	28.67	238,565,277	71.19
1910	473,990	0.14	...	...	99,175,023	29.60	235,467,787	70.26
1911	474,195	0.14	...	...	100,908,184	30.11	233,734,421	69.75
1912	473,990	0.14	...	...	96,026,438	28.66	238,616,372†	71.20

THE COMMONWEALTH.‡—AREA, 1,903,731,840 ACRES.

1901	76,142,761	4.00	35,060,119	1.84	721,407,284	37.89	1,071,121,676	56.27
1908	91,693,782	4.82	38,699,384	2.02	787,211,488	41.36	986,127,186	51.80
1909	93,566,533	4.91	41,028,797	2.15	795,877,094	41.81	973,259,416	51.13
1910	96,151,855	5.05	44,749,058	2.35	815,938,237	42.85	946,892,690	49.75
1911	100,713,498	5.29	46,479,854	2.45	822,440,546	43.20	934,097,942	49.06
1912	102,746,699	5.40	51,977,451	2.73	858,932,085	45.11	890,075,605	46.76

* Including roads and reserves. † Including aboriginal reserves and mission stations.
‡ Including Federal Capital Territory.

2. Diagram shewing Condition of Public Estate.—The following diagram shows the condition of the public estate in the Commonwealth at the end of the year 1912. The square itself represents the total area of the Commonwealth, while the relative areas of individual States are shewn by the vertical rectangles. The areas alienated absolutely, in process of alienation under systems of deferred payments, and the areas held under leases or licenses, are designated by the differently-shaded areas as described in the reference given below the diagram, while the areas unoccupied are left unshaded:—



3. **Federal Territory.** The following particulars relate to the tenures of land within the Federal Capital Territory at the end of the year 1913. The figures are approximate:—

FEDERAL CAPITAL TERRITORY, TENURES OF LAND, 1913.

Area of acquired lands	...	...	...	{ Leased	37,871 acres	Acres.
				{ Unoccupied	62,284 ..	
						100,155
Lands alienated	...	...	...	...	...	92,753
In process of alienation—						
(Conditional purchases and conditional leases)				...	...	119,579
Held under lease issued by the State				...	...	200,032
Unoccupied lands (roads, reserves, etc.)				...	...	71,141
Total Area of Territory				...	...	583,660

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

1. **Early Statistics.**—In previous issues of the Year Book will be found a brief review of the history of the pastoral industry in Australia up to the year 1860. (See Year Book No. 6, page 330.)

2. **Subsequent Statistics.**—The statistical records of live stock in Australia prior to the year 1860 are somewhat defective, but from that year onwards fairly complete particulars are available in most of the States. At the present time statistics of live stock are collected annually in all the States, principally through the agency of the police, but in the years 1885 to 1888 inclusive, and 1893 to 1895 inclusive, no such particulars were collected in South Australia, and similar gaps occur in the Victorian records for the periods 1895 to 1899 inclusive, and 1901 to 1903. In order to obtain totals for the Commonwealth for these years the missing numbers have been supplied by interpolation. The results so obtained probably differ but slightly from the actual numbers for the respective years.

3. **Increase in Numbers.**—Particulars concerning the numbers of each of the principal kinds of live stock in the Commonwealth at quinquennial intervals from 1860 to 1905, and thence onwards in single years, are given in the following table, and are shewn continuously in the graphs as given hereinafter.

During the fifty-two years covered by the table the live stock of the Commonwealth increased considerably, horses by 458 per cent., cattle 193 per cent., sheep 314 per cent., and pigs 141 per cent. The average annual increases which these aggregates represent are as follows:—Horses, 3.36 per cent. per annum; cattle, 2.08 per cent.; sheep, 2.77 per cent.; and pigs, 1.70 per cent.

COMMONWEALTH LIVE STOCK, 1860 to 1912.

Year.	Horses.	Cattle.	Sheep.	Pigs.
1860	431,525	3,957,915	20,135,286	351,096
1865	566,574	3,724,813	29,539,928	345,704
1870	716,772	4,276,326	41,593,612	543,388
1875	835,393	6,389,610	53,124,209	549,808
1880	1,061,078	7,523,000	62,176,027	815,776
1885	1,143,064	7,397,847	67,491,976	748,908
1885	1,521,588	10,299,913	97,881,221	891,138
1890	1,680,419	11,767,488	90,689,727	822,750
1895	1,609,654	8,640,225	70,602,995	950,349
1900	1,674,790	8,528,331	74,540,916	1,014,977
1905	1,765,186	9,349,409	83,687,655	813,569
1906	1,871,714	10,128,486	87,650,263	754,101
1907	1,927,729	10,547,679	87,043,266	695,691
1908	2,022,917	11,040,391	91,676,281	765,137
1909	2,165,866	11,744,714	92,047,015	1,025,850
1910	2,279,027	11,823,954	93,003,521	1,110,721
1911	2,408,113	11,577,259	83,263,686	845,255
1912				

4. Fluctuations.—The increases referred to, however, have not been continuous, marked fluctuations having taken place during the period, mainly on account of the droughts which have from time to time left their impress on the pastoral history of Australia. These were in evidence in 1869, 1877, 1884, 1895 and subsequent years, 1902, to some extent in 1908, and in a severer form during the earlier half of 1912. The want of rain had commenced to be seriously felt in the latter year, when an opportune general downfall in June materially relieved the situation, not however before much loss of stock had resulted, the poor lambing being the principal contributing factor. The drought of 1902 was one of the most severe experienced in Australia, the number of sheep in the Commonwealth diminishing under its influence from 72,040,211 on 31st December, 1901, to 53,668,347 at the same date in 1902—a decrease of more than 25 per cent. The falling off in the number of sheep in 1912 was 9,739,835, of cattle 251,695, and of pigs 265,466, being 10.47, 2.13 and 23.9 respectively. The number of horses during 1912 was the highest ever recorded in the Commonwealth, shewing an increase of 129,086, or 5.66 per cent., over the 1911 figures.

The extraordinary recuperative power of Australia is evidenced by the large increases in the numbers of stock which the good seasons, supervening on the various droughts, have witnessed. Thus, in the nine years from 1902 to 1911, horses increased by 754,426, cattle by 4,766,212, and sheep by 38,335,174, the corresponding increases per cent. per annum being horses 4.57 per cent., cattle 5.90 per cent., and sheep 6.30 per cent.

The years in which the numbers of live stock attained their maxima are as follows:— Horses, 1912, 2,408,113; cattle, 1894, 12,311,617; sheep, 1891, 106,421,068; and pigs, 1911, 1,110,721.

5. Live Stock in Relation to Population.—The number of each kind of live stock per head of the population of the Commonwealth has varied during the past fifty-two years in the manner shewn in the succeeding table:—

NUMBER OF LIVE STOCK PER HEAD OF POPULATION, 1860 to 1912.

Year.	Horses.	Cattle.	Sheep.	Pigs.	Year.	Horses.	Cattle.	Sheep.	Pigs.
1860 ...	0.38	3.45	17.58	0.31	1905 ...	0.42	2.11	18.48	0.25
1865 ...	0.41	2.68	21.25	0.25	1906 ...	0.43	2.29	20.45	0.20
1870 ...	0.43	2.60	25.24	0.33	1907 ...	0.45	2.43	21.06	0.18
1875 ...	0.44	3.37	27.99	0.29	1908 ...	0.46	2.49	20.57	0.16
1880 ...	0.48	3.37	27.87	0.37	1909 ...	0.47	2.55	21.20	0.18
1885 ...	0.42	2.75	25.05	0.28	1910 ...	0.49	2.65	20.80	0.23
1890 ...	0.48	3.27	31.06	0.28	1911 ...	0.50	2.59	20.36	0.24
1895 ...	0.48	3.36	25.93	0.24	1912 ...	0.51	2.45	17.59	0.18
1900 ...	0.43	2.29	18.75	0.25					

Considered in relation to population, the live stock attained its maximum in the period 1890-5, and its minimum in the year 1902. During the period of fifty-two years under review, the number of horses varied but slightly in proportion to population, the range being from 0.38 to 0.51 per head. In the case of cattle, the limits of variation were 1.82 and 3.45; sheep, 13.85 and 31.06; and pigs, 0.16 and 0.37.

6. Live Stock in Relation to Area.—The numbers of live stock per square mile in the several States and Territories of the Commonwealth on 31st December, 1912, were as follows:—

NUMBER OF LIVE STOCK PER SQUARE MILE, 31st DECEMBER, 1912.

States and Territories.	Horses.	Cattle.	Sheep.	Pigs.
New South Wales ...	2.31	9.80	125.56	0.95
Victoria ...	6.04	17.16	185.32	2.73
Queensland ...	1.01	7.77	30.29	0.21
South Australia... ..	0.73	1.01	14.42	0.18
Western Australia ...	0.15	0.83	4.71	0.05
Tasmania ...	1.68	8.48	71.05	1.87
Northern Territory ...	0.04	0.77	0.14	0.003
Federal Territory ...	1.65	7.79	206.84	0.22
Commonwealth ...	0.81	3.89	27.99	0.28

7. **Minor Classes of Live Stock.**—The numbers of minor classes of live stock returned as at 31st December, 1912, were as follows:—Goats, 270,973; camels, 10,045; mules and donkeys, 6973; and ostriches, 1891. Of these, goats were most numerous in Queensland, camels and donkeys in Western Australia, and mules and ostriches in South Australia. In the raising of goats, considerable attention has in recent years been devoted to the angora goat and its product—mohair, and over 20,000 angora goats are included in the total of 270,973 goats shewn above. Of these, 6924 were in Queensland, while the quantity of mohair produced in that State in 1912 was set down at 6770 lbs., and the number of skins placed on the market was returned as 1342.

8. **Net Exports of Principal Pastoral Products.**—The quantities by which the exports of the principal pastoral products of the Commonwealth exceeded the imports for the years 1908 to 1912 are as follows:—

**QUANTITIES OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS
OF THE COMMONWEALTH, 1908 to 1912.**

Products.	Unit of Quantity.	1908.	1909.	1910.	1911.	1912.
Animals (living)—						
Cattle	No.	841	894	3,641	9,861	16,050
Horses	"	9,164	6,335	6,619	4,377	7,055
Sheep	"	9,001	2,540	10,261	18,965	31,210
Bones	cwt.	11,008	13,070	14,145	17,151	20,885
Glue Pieces and Sinews	"	23,417	20,199	20,570	29,211	33,033
Glycerine	lb.					
Hair	"	191,475	190,052	304,006	287,957	152,369
Hoofs	cwt.	5,972	4,666	7,677	8,617	10,416
Horns	"					
Meats—						
Frozen Beef	lb.	40,707,121	71,130,972	103,421,146	108,774,397	142,186,123
Mutton and Lamb	"	91,607,611	116,914,965	190,228,336	129,567,812	115,365,547
Rabbits and Hares	pair	7,604,053	9,181,312	9,652,127	8,362,894	6,494,250
Other... ..	lb.	659,719	1,114,536	2,640,275	4,025,715	5,851,475
Potted and Extract of	"					
Preserved in Tins, etc.	"	11,979,606	22,877,569	33,556,048	40,347,183	33,571,112
Other... ..	"	120,055	235,179	591,196	1,062,233	2,837,729
Sausage Casings	"					
Skins—						
Hides	No.	219,798	286,973	286,639	452,942	746,068
Sheep	"	8,683,034	10,658,776	11,119,338	9,748,630	10,650,834
Rabbit and Hare	cwt.	65,391	62,140	86,930	92,587	87,878
Other, including Undressed Furs	No.					
Tallow	cwt.	586,220	920,157	1,256,661	1,343,046	1,058,311
Wool—Greasy	lb.	471,540,092	528,388,349	586,883,111	578,932,185	557,683,801
Scoured	"	70,883,847	73,560,380	77,042,042	69,223,301	60,232,936
Tops	"		496,492	1,123,469	2,515,106	3,018,050

*Quantity not available. Note. — signifies net imports.

The values of the net exports for the same five years are furnished in the next table and amount to no less a total than £171,430,744 for the period, or an average of £34,286,149 per annum, of which wool represents nearly 72 per cent. Meats, skins, and tallow rank next in order of importance.

**VALUE OF NET EXPORTS OF PRINCIPAL PASTORAL PRODUCTS OF THE
COMMONWEALTH, 1908 to 1912.**

Products.	1908.	1909.	1910.	1911.	1912.
Animals (living)—	£	£	£	£	£
Cattle	704	3,876	11,516	37,864	64,233
Horses	152,672	84,695	—51,267	—128,022	—28,017
Sheep	5,735	6,030	16,448	12,732	61,879
Bones	5,189	6,041	7,366	9,798	12,310
Glue Pieces and Sinews	12,679	11,900	11,037	13,645	18,139
Glycerine	3,179	2,316	10,169	15,926	13,621
Hair	16,739	22,584	25,879	24,987	29,950
Hoofs	2,024	1,622	2,804	3,169	4,922
Horns	18,270	18,729	25,532	25,673	30,339
Meats—					
Frozen Beef	451,503	733,028	1,179,060	1,101,914	1,630,306
" Mutton and Lamb	1,219,107	1,231,027	2,161,495	1,633,597	1,592,302
" Rabbits and Hares	336,093	423,679	486,592	407,034	320,887
" Other	8,507	18,027	40,816	43,390	83,065
Potted and Extract of	22,108	57,061	70,504	57,356	60,779
Preserved in Tins, etc.	213,476	401,606	609,880	756,148	611,288
Other	—2,890	1,663	8,173	13,010	69,485
Sausage Casings	26,600	52,182	38,204	37,129	8,735
Skins—					
Hides	86,310	239,539	286,274	467,364	871,953
Sheep	1,230,878	1,736,464	2,003,810	1,603,718	1,988,122
Rabbit and Hare	304,990	347,244	566,739	498,037	576,179
Other, including Undressed Furs	276,703	607,158	822,095	476,872	647,959
Tallow	785,910	1,229,541	1,888,796	1,934,009	1,545,033
Wool—Greasy	18,017,420	20,580,783	23,431,947	21,388,155	22,066,585
Scoured	4,883,805	4,820,092	5,202,683	4,398,126	3,957,792
Tops	—	58,638	134,874	275,406	323,299
Total Values	28,077,711	32,695,425	38,984,426	35,112,037	36,561,145

Note. — signifies net imports.

§ 2. Horses.

1. **Suitability of Australia for Horse-breeding.**—From the earliest times the suitability of the climate and pastures of Australia for the production of serviceable breeds of horses has been fully recognised. By the importation of high-class sires, and the careful selection of breeding mares, these natural advantages were utilised to the fullest extent, all classes of horses being bred. As a consequence of this combination of advantages the Australian horse, whether of the heavy draught, medium weight, or light saddle and carriage variety, compares more than favourably with the product of other lands. The Australian horse has been found suitable for the army in India, and large numbers are obtained annually for remount purposes.

2. **Distribution throughout the Commonwealth.**—As regards numbers, the State of New South Wales, the earliest settled of the group, established a lead, which it has ever since retained. The figures for the several States for a series of years are as follows:—

**NUMBER OF HORSES IN STATES, TERRITORIES, AND COMMONWEALTH,
1860 to 1912.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	Commonwealth.
1860 ...	251,497	76,536	23,504	49,399	9,555	21,034	...	...	431,525
1865 ...	282,587	121,051	51,091	73,993	15,700	22,152	...	...	566,574
1870 ...	337,597	167,220	83,358	83,744	22,174	22,679	...	...	716,772
1875 ...	357,696	196,184	121,497	107,164	29,379	23,473	...	...	835,393
1880 ...	395,984	275,516	179,152	148,219	34,568	25,267	*2,372	...	1,061,078
1885 ...	344,697	304,098	260,207	164,753	34,392	28,610	6,307	...	1,143,064
1890 ...	444,163	436,459	365,812	187,686	44,384	31,165	11,919	...	1,521,588
1895 ...	499,943	424,995	468,743	181,839	58,506	31,580	14,813	...	1,680,419
1900 ...	481,417	392,237	456,788	166,790	68,253	31,607	12,562	...	1,609,654
1905 ...	506,884	385,513	430,565	197,099	97,397	37,101	20,231	...	1,674,790
1906 ...	537,762	406,840	452,916	206,633	104,922	38,299	17,814	...	1,765,186
1907 ...	578,326	424,648	488,486	208,639	113,330	40,392	17,893	...	1,871,714
1908 ...	591,045	424,903	519,969	213,385	116,795	39,881	21,751	...	1,927,729
1909 ...	604,784	442,829	555,613	230,405	125,315	40,492	23,479	...	2,022,917
1910 ...	650,636	472,080	593,813	249,326	134,114	41,388	24,509	...	2,165,866
1911 ...	687,242	507,813	618,954	259,719	140,277	41,853	21,407	1,762	2,279,027
1912 ...	714,952	530,494	674,573	276,539	147,629	44,039	18,382	1,505	2,408,113

* Statistics not collected prior to 1880.

3. **Proportion in the Several States and Territories.**—The percentages of the numbers of horses in the several States and Territories on the totals for the Commonwealth for 1901 and the past five years are as follows:—

**PERCENTAGE OF HORSES IN EACH STATE AND TERRITORY ON THE TOTAL FOR
COMMONWEALTH, 1901 and 1908 to 1912.**

Year.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.	North'n Terr.	Fed. Terr.	Commonwealth.
	%	%	%	%	%	%	%	%	%
1901 ...	30.03	23.90	28.52	10.20	4.55	2.00	0.80	...	100.00
1908 ...	30.66	22.04	26.97	11.07	6.06	2.07	1.13	...	100.00
1909 ...	29.90	21.89	27.47	11.39	6.19	2.00	1.16	...	100.00
1910 ...	30.04	21.80	27.42	11.51	6.19	1.91	1.13	...	100.00
1911 ...	30.15	22.28	27.16	11.40	6.15	1.84	0.94	0.08	100.00
1912 ...	29.69	22.03	28.01	11.48	6.13	1.83	0.77	0.06	100.00

During the period under review, the proportions in South Australia and Western Australia have increased, that in Victoria has diminished, while in the case of New South Wales, Queensland, Tasmania, and the Northern Territory the proportion in 1912 was practically identical with that in 1901.

4. **Oversea Export Trade in Horses.**—Australia's export trade in horses is a fairly considerable, though somewhat fluctuating, one. During the past five years it has varied in number between 12,161 for the year 1910 and 7807 in 1909, and in value between £256,104 and £173,012 respectively for the same two years. The total number of horses exported during the five years amounted to 48,952, an average of 9790 per annum. The total value of the exports for the period was £1,062,829, or £212,566 per annum.

The average export value per head for the period was £21 14s. 3d. The numbers exported to the principal countries concerned in this trade are as follows:—

**NUMBER AND DESTINATION OF HORSES EXPORTED FROM THE COMMONWEALTH,
1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 years.
	No.	No.	No.	No.	No.	No.
India	6,296	6,136	9,187	7,416	7,299	36,334
Java	605	594	450	880	584	3,113
Straits Settlements ...	651	353	605	481	410	2,500
Philippine Islands ...	708	315	727	350	247	2,347
Ceylon	165	97	265	198	156	881
Mauritius	103	70	403	112	46	734
Fiji	88	114	190	180	146	718
German S.W. Africa ...	622	...	...	...	...	622
New Zealand	52	31	122	92	77	374
Japan	227	1	43	45	41	357
Papua	10	17	110	47	56	240
Siam	...	...	...	165	...	165
China	38	19	1	13	25	96
Hong Kong	15	29	...	32	...	76
South African Union ...	19	3	1	12	13	48
Other Countries	69	28	57	86	107	347
Total	9,668	7,807	12,161	10,109	9,207	48,952

The corresponding particulars relative to the value of the horses exported are given in the next table:—

VALUE OF HORSES EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 years.
	£	£	£	£	£	£
India	138,068	126,686	171,862	135,840	129,186	701,642
Java	16,457	19,598	10,424	19,235	13,459	79,173
Straits Settlements ...	15,491	10,339	21,185	12,939	11,322	71,276
Philippine Islands ...	12,134	5,303	14,971	7,795	5,449	45,652
Ceylon	3,418	2,201	7,486	3,622	3,403	20,130
Mauritius	2,385	480	7,191	2,371	1,358	13,785
Fiji	2,356	2,982	4,566	4,788	3,642	18,334
German S.W. Africa ...	13,255	...	...	...	...	13,255
New Zealand	3,436	2,847	12,403	17,322	11,435	47,443
Japan	12,234	60	1,860	2,115	2,650	18,919
Papua	163	936	2,055	920	899	4,973
Siam	...	...	...	7,298	...	7,298
China	892	295	60	390	625	2,262
Hong Kong	545	888	...	800	...	2,233
South African Union ...	931	180	25	500	695	2,331
Other Countries	2,453	217	2,016	4,016	5,421	14,123
Total	224,218	173,012	256,104	219,951	189,544	1,062,829

It will be seen from the foregoing tables that the export trade in horses with India, the Straits Settlements, and Java has been fairly uniform throughout the five years under review, but that the particulars for some of the other countries specified exhibit marked fluctuations.

The number of horses imported into the Commonwealth is comparatively small, consisting mainly of valuable animals introduced for breeding purposes, and imported principally from New Zealand and the United Kingdom. The average value per head of the horses imported during the five years was £67 1s. 1d., as compared with £21 14s. 3d. per head for the exports for the same period. The average number imported per annum was, however, only 3080, and the average annual value £206,554. The following table furnishes a comparison of imports and exports of horses during the five years 1908 to 1912:—

COMMONWEALTH IMPORTS AND EXPORTS OF HORSES, 1908 to 1912.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1908 ...	504	71,546	9,668	224,218	9,164	152,672
1909 ...	1,472	88,317	7,807	173,012	6,335	84,695
1910 ...	5,542	307,371	12,161	256,104	6,619	51,267
1911 ...	5,732	347,973	10,109	219,951	4,377	128,022
1912 ...	2,152	217,561	9,207	189,544	7,055	28,017
Total for 5 years	15,402	1,032,768	48,952	1,062,829	33,550	30,061

Note. — signifies value of net imports.

5. **Comparison with other Countries.**—The numbers of horses in some of the leading horse-breeding countries of the world, according to the latest available returns, are as follows:—

NUMBER OF HORSES IN SOME OF THE LEADING HORSE-BREEDING COUNTRIES IN THE WORLD.

Country.	Date.	Number of Horses.	Country.	Date.	Number of Horses.
Russian Empire ¹ ...	1909 & 1911	34,837,100	Sweden ...	1910	586,835
Utd. States America	1911	20,277,000	Uruguay ...	1908	556,307
Argentine Republic	1910	8,435,141	Spain ...	1911	546,035
Germany ...	1907	4,345,043	Bulgaria ...	1905	538,271
Austria-Hungary ² ...	1910 & 1911	4,153,495	Denmark ...	1909	535,018
France ...	1911	3,236,110	New Zealand ³ ...	1911	404,688
Australia ...	1912	2,408,113	Chile ...	1910	352,108
Canada ⁴ ...	1911	2,266,400	Netherlands ...	1910	327,377
United Kingdom ⁴ ...	1911	2,033,216	Belgium ...	1909	255,229
British India ⁵ ...	1910	1,564,935	Cape Colony ...	1904	255,060
Japan ...	1910	1,564,643	Algeria ...	1911	226,764
Italy ...	1908	906,820	Norway ...	1907	172,468
Rumania ...	1900	864,324	Servia ...	1910	152,617
Mexico ...	1902	859,217	Switzerland ...	1911	143,723
Cuba ...	1910	613,042	Orange River Col'ny	1909	132,574

1. European Russia 1911, Asiatic Russia 1909. 2. Austria 1910, Hungary 1911. 3. Exclusive of British Columbia. 4. Agricultural horses, unbroken horses, and breeding mares only. 5. Exclusive of Eastern Bengal. 6. Including mules and asses.

6. **Relation to Population.**—In proportion to population, horses are much more numerous in the Northern Territory than in any other of the principal divisions of the Commonwealth. Queensland is next in order, while Tasmania has the smallest number of horses per head. In all cases the number of horses per head of population was somewhat higher in 1912 than in 1901. Particulars for 1901 and the past five years are as follows:—

NUMBER OF HORSES PER HEAD OF POPULATION, 1901 and 1908 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Terr.	C'wth.
1901	... 0.35	0.32	0.91	0.46	0.38	0.18	2.76	...	0.42
1908	... 0.38	0.34	0.93	0.55	0.45	0.21	6.09	...	0.46
1909	... 0.37	0.35	0.96	0.59	0.47	0.21	6.70	...	0.47
1910	... 0.40	0.36	0.99	0.61	0.48	0.21	7.42	...	0.49
1911	... 0.41	0.37	0.99	0.62	0.48	0.22	6.59	0.92	0.50
1912	... 0.40	0.38	1.06	0.64	0.48	0.22	5.29	0.78	0.51

§ 3. Cattle.

1. **Purposes for which Raised.**—In all the States of the Commonwealth cattle-raising is carried out on a more or less extensive scale, the main object in certain districts being the production of stock suitable for slaughtering purposes, and in others the raising of profitable dairy herds. The great impetus which the development of the export trade in Australian butter gave to the dairying industry in the Commonwealth led to a considerable increase in the numbers and quality of the dairy herds of the States of Victoria, New South Wales, and Southern Queensland in particular, the sub-tropical portion of Australia being apparently the best adapted to this industry. On the other hand, by far the finest specimens of beef-producing cattle are those raised in the tropical districts of the Commonwealth, i.e., in the northern parts of Queensland, in the Northern Territory, and in the Kimberley districts in the north of Western Australia.

2. **Distribution throughout Commonwealth.**—Until 1880 New South Wales occupied the leading position in the Commonwealth group as a cattle-raising State, but in that year Queensland forged ahead and obtained a lead which it has since maintained. The extent of this lead has, however, varied considerably, owing principally to the effects produced by the tick fever and droughts, from both of which causes the Queensland herds suffered more severely than those of the other States. In fact, during the period from 1894, when the number of cattle in Queensland attained its maximum of rather more than 7,000,000, to 1903, when the number recorded was less than 2,500,000, an uninterrupted decline was experienced. During the nine years ended 1912, however, a rapid improvement took place, and the total reached on 31st December, 1912, was over 5,200,000.

The numbers of cattle in the several States and the Northern Territory at quinquennial intervals from 1860 to 1905 and thence onwards for each year are as follows:—

**NUMBER OF CATTLE IN STATES, TERRITORIES AND COMMONWEALTH,
1860 to 1912.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Ter.	C'wealth.
1860	2,408,586	722,332	432,890	278,265	32,476	83,366	...	...	3,957,915
1865	1,961,905	621,337	848,346	158,057	45,148	90,020	...	...	3,724,813
1870	2,195,096	721,096	1,076,630	136,832	45,213	101,459	...	...	4,276,326
1875	3,134,086	1,054,598	1,812,576	219,240	50,416	118,694	...	...	6,389,610
1880	2,580,040	1,286,267	3,162,752	283,315	63,719	127,187	*19,720	...	7,523,000
1885	1,317,315	1,290,790	4,162,652	271,478	70,408	138,642	146,562	...	7,397,847
1890	2,091,229	1,782,978	5,558,264	359,938	130,970	162,440	214,094	...	10,299,913
1895	2,150,057	1,795,314	6,822,401	355,867	200,091	162,801	280,957	...	11,767,488
1900	1,983,116	1,602,384	4,078,191	214,761	338,590	165,516	257,667	...	8,640,225
1905	2,337,973	1,737,690	2,963,695	304,027	631,825	206,211	346,910	...	8,528,331
1906	2,549,944	1,804,323	3,413,919	325,724	690,011	211,117	354,371	...	9,349,409
1907	2,751,193	1,842,807	3,892,232	334,671	717,377	215,523	374,683	...	10,128,486
1908	2,955,934	1,574,162	4,321,600	340,376	741,788	205,827	407,992	...	10,547,679
1909	3,027,727	1,549,640	4,711,782	344,034	793,217	199,945	414,046	...	11,040,391
1910	3,140,307	1,547,569	5,131,699	384,862	825,040	201,854	513,383	...	11,744,714
1911	3,185,824	1,647,127	5,073,201	393,566	843,638	217,406	459,780	8,412	11,828,954
1912	3,033,726	1,508,089	5,210,891	383,418	806,294	222,181	405,552	7,108	11,577,259

* Statistics not collected prior to 1880.

3. Proportion in each State.—During the period elapsing between 1901 and 1912 the proportion of cattle in the several States and the Northern Territory has varied considerably, as shewn hereunder :—

**PERCENTAGE OF CATTLE IN EACH STATE AND TERRITORY ON TOTAL FOR
COMMONWEALTH, 1901 and 1908 to 1912.**

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Federal Territory.	C'wealth.
	%	%	%	%	%	%	%	%	%
1901 ...	24.11	19.12	44.43	2.65	4.69	1.99	3.01	...	100.00
1908 ...	28.02	14.92	40.97	3.23	7.04	1.95	3.87	...	100.00
1909 ...	27.42	14.04	42.68	3.12	7.18	1.81	3.75	...	100.00
1910 ...	26.74	13.18	43.69	3.28	7.02	1.72	4.37	...	100.00
1911 ...	26.93	13.92	42.89	3.33	7.14	1.84	3.89	0.07	100.00
1912 ...	26.20	13.03	45.01	3.31	6.97	1.92	3.50	0.06	100.00

A comparison of the positions of the several States in 1901 and 1912 shews that, while Victoria's proportion of the Commonwealth herds suffered considerable diminution, and that for Tasmania a falling off to a slight extent, fairly large increases are in evidence in the other States, the Northern Territory also shewing an upward tendency.

4. Imports and Exports of Cattle.—Although the various products of the cattle-raising industry bulk largely in the export trade of the Commonwealth, the export of live cattle from Australia has never been considerable. The number of cattle imported is also small, consisting, as in the case of horses, mainly of valuable animals for breeding. Details are as follows :—

COMMONWEALTH IMPORTS AND EXPORTS OF CATTLE, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	114	3,591	2,413	22,088	2,299	18,497
1908 ...	112	11,020	953	11,724	841	704
1909 ...	81	5,710	975	9,586	894	3,876
1910 ...	104	8,665	3,745	20,181	3,641	11,516
1911 ...	103	7,806	9,964	45,670	9,861	37,864
1912 ...	33	1,502	16,033	65,735	16,050	64,233

The average value of the cattle imported into the Commonwealth during the last five years was £30 2s. 11d. per head, while the average value of the cattle exported during the same period was £4 16s. 5d. The imported cattle were principally for stud purposes.

The comparatively large exports for 1912 were due to shipments to Java and Philippine Islands valued at £19,257 and £35,884 respectively. The bulk of these cattle were exported from Western Australia.

5. Cattle Slaughtered.—Complete returns of the number of cattle slaughtered annually in the Commonwealth are not obtainable, as these particulars were collected in Tasmania prior to 1911 for Hobart and Launceston only, and were collected in South Australia for the first time in 1903 in respect of the year 1907. Estimates for the missing data for these States have, however, been made, as shewn in the following table:—

CATTLE (INCLUDING CALVES) SLAUGHTERED IN STATES, TERRITORIES AND COMMONWEALTH, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas. †	N.T.	Fed. Ter.	C'wealth.
1901	335,823	251,477	377,433	*72,000	39,424	34,000	...	...	1,110,157
1908	376,574	281,087	243,069	67,369	46,975	36,000	†3,759	...	1,054,833
1909	412,066	287,548	305,026	82,460	49,716	37,000	3,975	...	1,177,791
1910	483,947	319,665	378,514	84,164	55,723	37,000	4,061	...	1,363,074
1911	548,651	347,926	444,264	87,293	58,049	38,000	\$4,061	269	1,528,513
1912	612,773	368,512	580,332	113,344	59,695	41,000	\$4,061	267	1,779,984

* Estimated. † Partly estimated. : Not available for previous years. \$ 1910 figures, those for 1911 and 1912 not available.

For Hobart and Launceston only, the figures for the years 1901 and 1907 to 1910 were, respectively, 8815, 12,037, 11,907, 10,059 and 11,569.

6. Export of Beef Preserved by Cold Process.—A large export trade in beef preserved by cold process is carried on by the Commonwealth, mainly with the United Kingdom, the Philippine Islands and the South African Union. The quantities so exported during the five years 1903 to 1912 are as follows:—

**QUANTITY OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	12,984,176	52,777,113	91,250,736	81,501,060	108,886,860	346,799,945
Philippine Islands ...	12,826,444	11,260,779	10,020,181	10,336,535	13,996,124	58,440,063
South African Union ...	4,316,387	1,698,046	3,784,637	7,337,652	9,228,546	26,365,268
Russia ...	6,821,701	...	...	...	...	6,821,701
Egypt ...	1,707,355	2,525,097	1,362,686	1,905,595	2,084,806	9,585,539
Straits Settlements *	841,413	1,092,263	1,073,889	1,646,590	1,781,817	6,435,972
Malta ...	752,761	856,599	862,148	1,526,389	1,090,044	5,087,941
Italy ...	7,179	90,609	327,056	2,509,466	2,127,876	5,062,186
Hong Kong ...	354,934	220,919	385,895	618,688	551,012	2,131,448
Canada ...	...	...	...	239,653	904,832	1,144,485
Gibraltar ...	...	130,703	70,908	403,626	...	605,237
Japan ...	408,141	102,723	22,119	77,223	1,098	611,304
Ceylon ...	87,948	56,509	99,564	151,104	150,620	545,745
Hawaiian Islands ...	...	105,403	71,606	272,559	1,198,140	1,647,708
Other countries ...	203,077	225,532	96,103	260,277	208,301	993,290
Total ...	40,711,516	71,142,295	109,427,528	108,786,417	142,210,076	472,277,832

The value of the beef preserved by cold process exported from the Commonwealth during the same years is as follows :—

**VALUE OF BEEF PRESERVED BY COLD PROCESS EXPORTED FROM THE
COMMONWEALTH, 1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	134,014	533,044	967,662	813,393	1,245,536	3,693,649
Philippine Islands ...	151,076	125,052	126,719	114,989	162,555	680,391
South African Union ...	46,181	18,251	36,559	67,940	67,601	266,532
Russia ...	70,358	...	...	...	...	70,358
Egypt ...	19,770	26,747	14,582	19,308	24,537	104,944
Straits Settlements ...	9,820	11,899	12,452	21,065	20,141	75,377
Malta ...	7,987	8,690	9,790	15,412	11,491	53,370
Italy ...	120	1,002	3,866	26,497	23,173	54,658
Hong Kong ...	3,873	2,144	3,826	6,370	4,346	20,559
Canada ...	...	...	...	3,707	16,831	20,538
Gibraltar ...	...	1,157	517	3,751	...	5,425
Japan ...	4,494	1,139	205	694	13	6,545
Ceylon ...	1,507	601	1,035	1,315	1,367	5,825
Hawaiian Islands ...	...	1,067	690	4,413	20,325	26,495
Other countries ...	2,351	2,417	1,243	3,278	2,815	12,104
Total ...	451,551	733,210	1,179,146	1,102,132	1,630,731	5,096,770

During the five years under review, the largest of Australia's customers for beef preserved by cold process has been the United Kingdom, while the most consistent and the second largest customer has been the Philippine Islands; the South African Union and Egypt ranked next in order of importance. The exporting States during 1912 were: Queensland, 129,249,438 lbs., valued at £1,472,711; New South Wales, 7,897,831 lbs., valued at £98,244; Victoria, 4,582,640 lbs., valued at £54,794. and South Australia, 480,167 lbs., valued at £4982.

7. Comparison with other Countries.—In the following comparison of the herds of Australia with those of some of the principal cattle-raising countries of the world, the latest available figures have been inserted in each case :—

NUMBER OF CATTLE IN VARIOUS COUNTRIES.

Country.	Date.	No. of Cattle.	Country.	Date.	No. of Cattle.
British India ¹ ...	1910	72,669,279	Netherlands ...	1910	2,026,948
U. S. of America ² ...	1911	60,502,000	New Zealand ...	1911	2,020,171
Russian Empire ...	1909 & 11	53,167,680	Cape Colony ...	1904	1,954,390
Argentine Republic...	1910	28,827,900	Belgium ...	1910	1,823,000
Germany ...	1907	20,630,544	Bulgaria ...	1905	1,695,533
Austria-Hungary ³ ...	1910 & 11	16,478,097	Chile ...	1910	1,640,322
France ...	1911	14,552,430	Switzerland ...	1911	1,443,371
United Kingdom ...	1911	11,866,111	Japan ...	1910	1,384,183
Australia ...	1912	11,577,259	Transvaal ...	1911	1,196,069
Uruguay ...	1908	8,192,602	Algeria ...	1911	1,113,952
Canada ⁴ ...	1911	7,086,600	Norway ...	1907	1,094,101
Italy ...	1908	6,198,861	Ceylon ...	1910	1,022,346
Mexico ...	1902	5,142,457	Servia ...	1910	957,918
Cuba ...	1910	3,212,087	Orange River Colony	1909	721,258
Sweden ...	1910	2,747,526	Portugal ...	1906	703,198
Rumania ...	1900	2,588,526 ⁵	Egypt ...	1911	656,166
Spain ...	1911	2,541,112	Natal ...	1909	502,212
Denmark ...	1909	2,253,982			

1. Exclusive of Eastern Bengal. 2. European Russia, 1911; Asiatic Russia, 1909. 3. Austria, 1910, Hungary 1911. 4. Exclusive of British Columbia. 5 Including buffaloes.

8. *Relation to Population.*—The number of cattle per head of population differs considerably in the several States, and is also subject to marked variation from year to year in the same State. Particulars for 1901 and the past five years are as follows:—

NUMBER OF CATTLE PER HEAD OF POPULATION, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.Aust.	Tas.	Northern Territory.	Fed. Terr.	C'wealth.
1901 ...	1.49	1.34	7.44	0.63	2.06	0.96	54.68	...	2.22
1908 ...	1.89	1.26	7.76	0.88	2.86	1.08	111.63	...	2.49
1909 ...	1.88	1.21	8.15	0.88	2.99	1.04	117.03	...	2.55
1910 ...	1.91	1.21	8.57	0.95	2.98	1.04	150.86	...	2.65
1911 ...	1.88	1.23	8.15	0.94	2.87	1.12	141.56	4.38	2.59
1912 ...	1.71	1.09	8.19	0.89	3.63	1.13	116.71	3.66	2.45

For the Commonwealth as a whole the ratio of cattle to population is 10 per cent. greater for 1912 than for 1901, and exhibits a continuous increase from 1902 to 1910, while the proportion for 1911 is approximately the same as for the previous year; 1912 shews a slight decline. The excess of the 1911 figures over those for 1901 is in evidence in all the States except Victoria, and is most marked in the case of the Northern Territory. In Queensland the ratio has increased very rapidly during the past eight years, the ratio per head of population for 1911 being 72 per cent. greater than for 1903. In Victoria the ratios for the last three years are the lowest for the period under review.

§ 4. Sheep.

1. *The Founding of the Commonwealth Pastoral Industry.*—Fortunately for Australia, the suitability of its climate and general conditions for the production of a high class of wool was, at an early date in the history of its settlement, surmised and tested by Captain Macarthur, one of the pioneer sheep-breeders of New South Wales. To the energy of this enterprising pastoralist is due in large measure the rapid and extremely satisfactory development of Australia as a producer of fine wool, and though

it would appear that the introduction of the Merino sheep into Australia was not due to Macarthur, a great deal of the credit for having successfully established the pastoral industry in Australia must certainly be his.

2. Distribution throughout Commonwealth.—With the exception of a short period in the early sixties, when the flocks of Victoria outnumbered those of the mother State, New South Wales has maintained amongst the Commonwealth group the lead in sheep production which naturally attached to it as the portion of the Commonwealth in which settlement was first effected. From 1878 onwards, the number of sheep in New South Wales has, in every year except 1902, 1908, 1910, 1911, and 1912 represented more than half the total for the Commonwealth, and even in these years it fell but little short of half the total.

The number of sheep in the several States and Territories at quinquennial intervals from 1860 to 1905, and for each year onwards to 1912, is as follows:—

**NUMBER OF SHEEP IN STATES, TERRITORIES AND COMMONWEALTH,
1860 to 1912.**

Year.	New South Wales.	Victoria.	Queens- land.	South Aust.	Western Aust.	Tas- mania.	Northern Territory	Federal Territory.	Total C'wealth.
1860	6,119,163	5,780,896	3,449,350	2,824,811	260,136	1,700,930	...	...	20,135,286
1865	8,132,511	8,835,380	6,594,966	3,779,308	445,044	1,752,719	...	...	29,539,928
1870	16,308,585	10,761,887	8,163,818	4,400,655	608,892	1,349,775	...	...	41,593,612
1875	25,353,924	11,749,532	7,327,774	6,179,395	881,861	1,731,723	...	...	53,124,209
1880	35,398,121	10,360,285	6,935,967	6,443,904	1,231,717	1,796,715	*9,318	...	62,176,027
1885	37,820,906	10,681,897	8,994,322	6,593,648	1,702,719	1,648,627	49,917	...	67,491,976
1890	55,986,431	12,692,843	18,007,234	7,004,642	2,524,913	1,619,256	45,902	...	97,881,221
1895	47,617,687	12,791,084	19,856,959	6,531,006	2,295,832	1,523,846	73,713	...	90,689,727
1900	40,020,506	10,841,790	10,339,185	5,235,220	2,434,311	1,683,956	48,027	...	70,602,995
1905	39,506,764	11,455,115	12,535,231	6,277,812	3,120,703	1,583,561	61,730	...	74,540,916
1906	44,132,421	12,937,440	14,886,438	6,624,941	3,340,745	1,729,394	36,276	...	83,687,655
1907	44,461,839	14,146,734	16,738,047	6,529,637	3,684,974	1,744,800	44,232	...	87,650,263
1908	43,370,797	12,545,742	18,348,851	6,898,451	4,097,324	1,728,053	54,048	...	87,043,266
1909	46,202,578	12,937,963	19,593,791	6,432,038	4,731,737	1,734,761	43,398	...	91,676,281
1910	45,560,969	12,882,665	20,331,838	6,267,477	5,158,516	1,788,310	57,240	...	92,047,015
1911	44,722,523	13,857,904	20,740,981	6,171,907	5,411,542	1,823,017	50,983	224,764	93,003,521
1912	38,855,861	11,892,224	20,310,036	5,481,489	4,596,958	1,862,669	75,808	188,641	83,263,686

* Statistics not collected prior to 1880.

3. Proportion in the Several States and Territories.—Particulars concerning the relative positions of the several States and Territories with respect to the total flocks of Australia during the years 1901 and 1908 to 1912, and the variations in such positions which have taken place during those years are as hereunder:—

**PERCENTAGE OF SHEEP IN EACH STATE AND TERRITORY ON TOTAL
FOR COMMONWEALTH, 1901 and 1908 to 1912.**

Year.	N.S.W.	Vic.	Q'sland.	S. Aust.	W. Aus.	Tas.	N. T.	Fed. Terr.	C'wealth.	
	%	%	%	%	%	%	%	%	%	
1901	...	58.10	14.82	13.92	6.95	3.65	2.49	0.07	...	100.00
1908	...	49.83	14.41	21.08	7.93	4.71	1.98	0.06	...	100.00
1909	...	50.40	14.11	21.37	7.02	5.16	1.89	0.05	...	100.00
1910	...	49.50	14.00	22.09	6.81	5.60	1.94	0.06	...	100.00
1911	...	48.09	14.90	22.30	6.64	5.82	1.96	0.05	0.24	100.00
1912	...	46.67	14.28	24.39	6.58	5.52	2.24	0.09	0.23	100.00

During the period the proportion of total Commonwealth flocks declined considerably in the case of New South Wales, and in a less marked degree in Victoria,

South Australia and Tasmania, while in the case of Queensland a marked advance in proportion was experienced, and in Western Australia to a minor extent.

4. Oversea Imports and Exports of Sheep.—As in the case of cattle, the oversea exports of live sheep from Australia are of comparatively small importance. The principal countries to which such exports have been consigned during recent years are the South African Union, Straits Settlements, and Papua. The following are the particulars of the imports and exports for the years 1901 and 1908 to 1912 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SHEEP, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Exports.	
	No.	Value.	No.	Value.	No.	Value.
		£		£		£
1901 ...	553	12,184	12,094	12,104	11,541	—30
1908 ...	4,020	18,717	13,021	24,452	9,001	5,735
1909 ...	2,775	14,213	5,315	20,243	2,540	6,030
1910 ...	2,863	14,008	13,144	30,456	10,281	16,448
1911 ...	5,254	25,997	24,219	38,729	18,965	12,732
1912 ...	2,903	10,643	34,113	72,522	31,210	61,879

Note. — signifies net imports.

5. Sheep Slaughtered.—The numbers of sheep slaughtered in the several States during 1901 and 1908 to 1912 are as follows :—

SHEEP (INCLUDING LAMBS) SLAUGHTERED, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.†	N.T.	Fed. Terr.	C'wealth.
1901	4,519,133	2,469,797	554,705	*678,000	428,534	322,000	...	...	8,972,169
1908	5,201,492	3,309,865	705,776	1,212,868	423,056	340,000	300	...	11,193,357
1909	6,430,486	3,708,512	1,076,718	1,335,514	491,103	344,000	523	...	13,386,856
1910	7,470,002	4,245,881	1,751,151	1,316,388	549,977	346,000	516	...	15,679,915
1911	6,539,559	4,348,363	981,153	1,275,734	622,555	350,000	516	7,366	14,125,246
1912	5,805,595	4,153,269	1,273,332	1,332,838	610,214	357,000	516	6,587	13,539,351

* Estimated. † Partly estimated ‡ Figures for 1910, those for 1911 and 1912 not available.

6. Exports of Mutton and Lamb Preserved by Cold Process.—Australia's export trade in mutton and lamb preserved by cold process is one which has, in recent years, advanced rapidly. In 1903 the value of exports was £492,114, while seven years afterwards, in 1910, the value amounted to no less a sum than £2,161,513; the average for the past two years, 1911 and 1912, was £1,613,000. In all the States considerable attention is now being paid to the breeding of a class of sheep that will best meet the requirements of consumers. Crosses between the Merino and the Lincoln, or between the Merino and the Leicester breeds, have proved exceedingly valuable, as they furnish both a good quality of wool and also an excellent carcase for export purposes. The breeding of Shropshire and Southdown sheep with a view to combining meat production with that of wool is also on the increase. Special attention is being paid to the raising of lambs for the home markets, as it is becoming very widely recognised that with suitable breeds, the export trade in lambs is a very profitable one.

Australia's principal customer in this trade is the United Kingdom, which has absorbed 93.7 per cent. of the total quantity exported from the Commonwealth during the past

five years. The South African Union and Canada took 2.3 and 1.2 per cent. respectively, while the balance of 2.8 per cent. was principally absorbed by the Philippine Islands, Malta, Straits Settlements, and Egypt. The recent revision of the tariff of the United States of America will doubtless have the effect of eventually opening up a vast market in that country for Australian mutton and lamb and other meat products. The quantities exported to various countries are as follow:—

**QUANTITY OF MUTTON AND LAMB PRESERVED BY COLD PROCESS EXPORTED
FROM THE COMMONWEALTH, 1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	82,341,131	110,138,905	181,556,597	120,757,079	108,556,172	603,349,884
South African Union ...	5,323,602	2,458,029	2,720,364	2,657,853	1,910,196	15,070,264
Canada ...	719,336	1,138,974	2,309,441	2,077,802	1,320,718	7,566,271
Philippine Islands ...	673,867	682,116	788,577	859,022	677,076	3,680,658
Malta ...	487,586	630,313	838,871	699,514	266,085	2,922,319
Straits Settlements ...	471,634	568,684	713,836	845,079	992,831	3,592,064
Egypt ...	610,269	455,599	369,611	447,411	624,506	2,507,396
Hong Kong ...	319,382	323,113	318,590	417,316	328,330	1,706,731
Ceylon ...	156,291	117,141	254,212	332,011	293,523	1,153,178
Hawaiian Islands ...	234,412	255,051	145,246	102,361	83,770	820,840
Gibraltar ...	...	67,190	52,590	99,501	...	219,281
Japan ...	89,605	22,789	18,681	19,885	...	151,160
Other Countries ...	180,299	57,735	142,494	254,461	318,824	953,813
Total ...	91,607,614	116,915,639	190,229,330	129,569,295	115,371,981	643,693,859

The corresponding particulars concerning the values of the exports are:—

**VALUES OF FROZEN MUTTON AND LAMB EXPORTED FROM THE COMMONWEALTH,
1908 to 1912.**

Country to which Exported.	1908.	1909	1910.	1911.	1912.	Total for 5 years.
	£	£	£	£	£	£
United Kingdom ...	1,115,908	1,161,475	2,069,932	1,529,633	1,499,648	7,376,596
South African Union ...	55,293	23,578	28,935	28,365	23,919	160,090
Canada ...	10,257	14,646	23,132	28,027	20,336	96,398
Philippine Islands ...	8,056	6,059	7,878	9,282	9,271	40,546
Malta ...	5,526	6,262	10,140	8,274	3,228	33,430
Straits Settlements ...	5,261	5,488	7,407	9,781	13,387	41,324
Egypt ...	7,801	4,987	4,385	6,248	8,282	31,703
Hong Kong ...	3,487	2,997	3,288	4,581	4,483	18,836
Ceylon ...	1,722	1,096	2,649	3,910	4,448	13,825
Hawaiian Islands ...	2,927	2,994	1,783	1,549	1,343	10,596
Gibraltar ...	...	700	329	829	...	1,858
Japan ...	891	195	240	202	...	1,528
Other Countries ...	1,978	558	1,415	2,941	4,033	10,925
Total ...	1,219,107	1,231,035	2,161,513	1,633,622	1,592,378	7,897,655

7. Comparison with other Countries.—As regards the size of its flocks and the quantity and quality of wool produced, Australia occupies the foremost position amongst the sheep-raising countries of the world. The following comparison gives the latest available figures relative to the number of sheep in the principal wool-producing countries:—

NUMBER OF SHEEP IN VARIOUS COUNTRIES.

Country.	Date.	No. of Sheep	Country.	Date.	No. of Sheep.
Australia ...	1912	83,263,686	Germany ...	1907	7,703,710
Russian Empire ¹	{ 1909 } 1911	81,498,972	Orange River Colony	1909	7,481,251
Argentine Republic ...	1910	73,012,640	Rumania ...	1900	5,655,444
United States of America	1911	53,633,000	Servia ...	1910	3,808,815
Ottoman Empire ...	1908	40,000,000	Chile ...	1910	3,537,728
United Kingdom ...	1911	30,479,807	Mexico ...	1902	3,424,430
Uruguay ...	1908	26,286,296	Transvaal ...	1911	3,360,688
New Zealand ...	1912	23,750,153	Portugal ...	1906	3,072,988
British India ² ...	1910	23,280,662	Canada ⁴ ...	1911	2,389,300
Cape Colony ...	1910	19,026,884	Norway ...	1907	1,393,488
France ...	1911	16,425,330	Natal ...	1909	1,068,996
Spain ...	1911	15,725,882	Sweden ...	1910	1,003,981
Italy ...	1908	11,162,926	Netherlands ...	1910	889,036
Austria-Hungary ³	{ 1910 } 1911	10,975,143	Denmark ...	1909	726,879
Algeria ...	1911	8,528,610	Tunis ...	1911	686,730
Bulgaria ...	1905	8,130,997	Iceland ...	1909	557,127
			Belgium ...	1895	235,722
			Switzerland ...	1911	159,727

1. Including goats. European Russia, 1911; Asiatic Russia, 1909. 2. Exclusive of Eastern Bengal. 3. Austria 1911, Hungary 1910. 4. Exclusive of Alberta.

8. **Relation to Population.**—The relation of the flocks of the several States and Territories to the populations at the end of each year 1901 and 1908 to 1912 is as follows:—

NUMBER OF SHEEP PER HEAD OF POPULATION, 1901 and 1908 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas	N.T.	Federal Ter.	C'wealth.
1901	30.43	8.82	19.80	13.95	13.56	10.23	10.34	...	18.83
1908	27.99	10.03	32.94	17.88	15.78	9.01	15.13	...	20.57
1909	28.63	10.13	33.91	16.87	17.81	8.98	12.39	...	21.20
1910	27.72	9.90	33.94	15.40	18.63	9.23	17.34	...	20.80
1911	26.74	10.17	33.34	14.76	18.40	9.42	15.70	117.00	20.36
1912	21.86	8.61	31.91	12.74	15.02	9.45	21.82	97.24	17.59

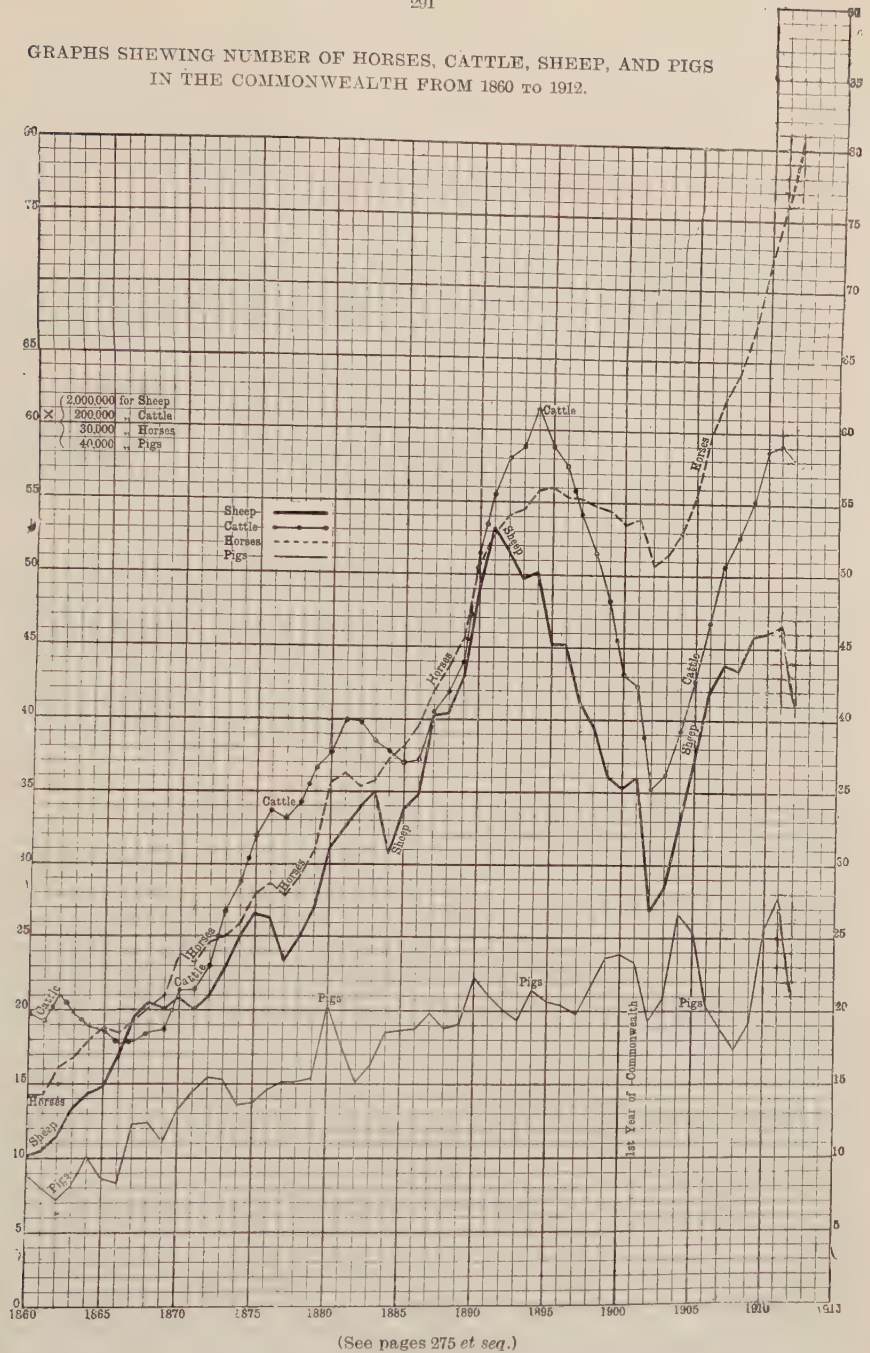
§ 5. Wool.

1. **Importance of Wool Production.**—The chief contributing factor to the pastoral wealth of Australia is the production of wool, the value of the output for the season ended 30th June, 1913, being about £27,550,000. Most of the wool produced in the Commonwealth is exported, but with the increased activity of the local woollen mills there has, in recent years, been an increasing quantity used in Australia, although even now the quantity so used represents little more than $1\frac{1}{2}$ per cent. of the whole clip.

2. **Greasy and Scoured Wool.**—For the purpose of comparing the clips of the several States or of the Commonwealth as a whole for a series of years, it is convenient to have the total production expressed in terms of greasy wool.

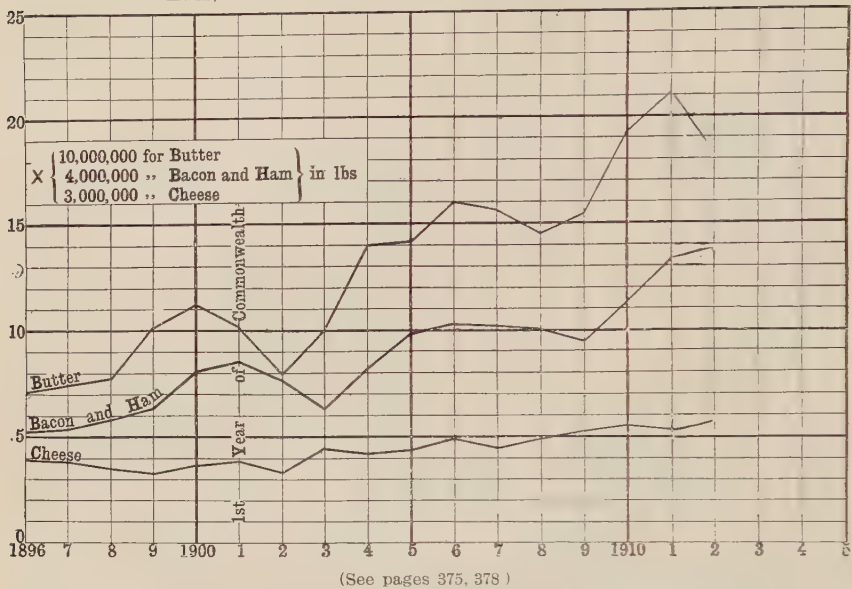
The total quantity of Australian wool scoured and washed before export is, on the average, about 20 per cent. of the total clip. The ratio of loss of weight in scouring varies largely with season, locality, breed, and condition. It seems preferable to express "scoured and washed" wool in terms of "greasy" rather than *vice versa*, since the absolute error arising from any uncertainty as to the average loss of weight has thus the less effect.

GRAPHS SHIEWING NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS
IN THE COMMONWEALTH FROM 1860 TO 1912.



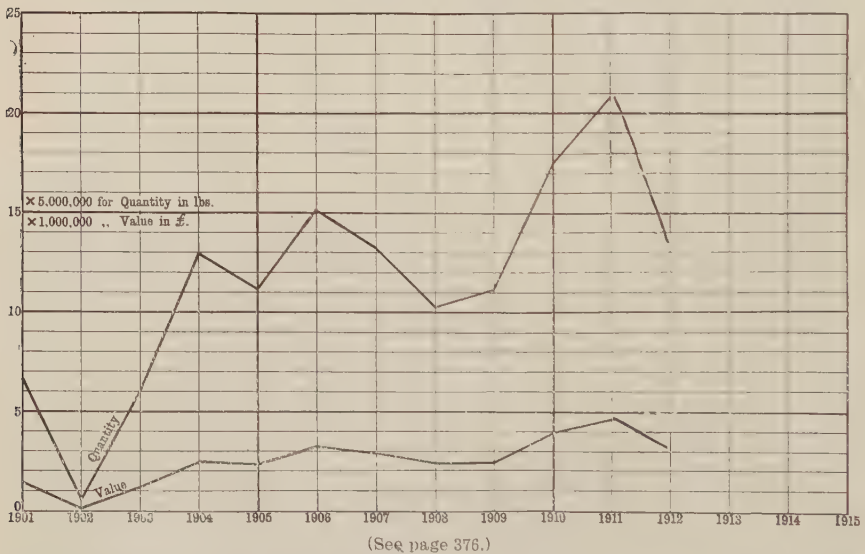
EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year. The totals of the sheep, cattle, horses, and pigs for the Commonwealth are indicated by the several curves or graphs, the vertical side of a small square representing 2,000,000 in the case of sheep; 200,000 for cattle; 30,000 for horses; 40,000 for pigs.

GRAPHS SHEWING THE PRODUCTION OF BUTTER AND CHEESE, AND BACON AND HAM, IN THE COMMONWEALTH, FROM 1896 TO 1912.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle denotes in the case of butter 10,000,000 lbs.; in the case of bacon and ham, 4,000,000 lbs.; and in the case of cheese 3,000,000 lbs.

GRAPHS SHEWING THE QUANTITY AND VALUE OF NET EXPORTS OF BUTTER FROM THE COMMONWEALTH, FROM 1901 TO 1912.



EXPLANATION OF GRAPH.—The base of each small rectangle represents an interval of one year, and the vertical height of each small rectangle represents 5,000,000 lbs. in weight, or £1,000,000 in value.

In the following tables, relative to the production of wool, "scoured and washed" has been converted into the estimated equivalent amount of "greasy" on the assumption that two pounds of "greasy" wool are on the average required to produce one pound of "scoured and washed" wool.

3. Total Production.—The estimated production of wool in the several States, formerly based on Customs returns, being no longer available from that source, an effort has been made to arrive at approximate figures from data collected by the State Statisticians from growers and fellmongers, etc. Particulars for years prior to 1910 will be found in former issues (see Year Book No. 6, page 346). The following table gives the estimates obtained in reference to the three seasons ended 30th June, 1911, 1912 and 1913 :—

ESTIMATED QUANTITY OF WOOL AS IN THE GREASE, SHORN, FELLMONGERED, OR ON SKINS SHIPPED DURING THE SEASONS ENDED 30th JUNE, 1911, 1912 and 1913.

State.	1910-11.	1911-12.	1912-13.
	lbs.	lbs.	lbs.
New South Wales* ...	374,907,068	371,546,415	326,804,000
Victoria ...	101,803,644	110,463,041	88,762,612
Queensland ...	139,250,802	142,382,269	136,878,270
South Australia ...	63,613,781	60,056,470	56,691,036
Western Australia ...	29,984,453	30,833,837	26,849,981
Tasmania ...	11,338,540	10,726,593	12,416,014
Northern Territory ...	400,000	400,000	450,000
Commonwealth...	721,298,288	726,408,625	648,851,913

* Including Federal Territory.

It is to be noted that a shortage has apparently occurred in the collection of these statistics, the estimates falling considerably below the approximate totals obtained from oversea shipments of wool and skins, together with quantity used in local manufactories. The Commonwealth total so obtained represented 758,090,676 lbs. for the season 1910-11, 785,753,099 lbs. for 1911-12, and 668,667,078 lbs. for 1912-13.

4. Wool Locally Used.—The quantity of wool used in the manufactories of the several States of the Commonwealth during the past five calendar years was approximately as follows :—

LOCALLY USED WOOL, ESTIMATED AS "GREASY," COMMONWEALTH AND STATES, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	1,020,456	1,095,136	1,594,712	2,401,920	2,420,000
Victoria ...	6,152,250	5,239,806	5,309,730	5,774,868	5,535,483
Queensland ...	224,460	301,078	270,246	336,486	583,892
South Australia ...	672,112	634,250	564,432	634,238	710,000
Western Australia ...	...	...	...	...	...
Tasmania ...	1,044,879	991,388	1,087,400	986,000	1,082,000
Commonwealth ...	9,114,157	8,261,658	9,826,520	10,133,512	10,331,375

5. **Bounties on Combed Wool or Tops Exported.**—Under the Bounties Act 1907, bounties are payable on combed wool or tops exported from the Commonwealth, provided they were produced therein. The maximum amount to be paid may not exceed the rate of £10,000 per annum; any unexpended sum may be carried forward and be available for the years following. For the three years commencing 1st January, 1909, the rate of bounty granted is 1½d. per lb.; and for the two years commencing 1st January, 1912, 1d. per lb. is payable. During the year 1908-9, an amount of £326 was paid in bounties, in 1909-10 £4933, in 1910-11 £8522, and in 1911-12 £16,898. The quantities of wool on which these amounts were paid were 52,035, 789,216, 1,363,520 and 3,122,244 lbs. respectively.

Figures shewing the exports of wool tops for the calendar years 1909 to 1912 inclusive will be found at the foot of the two following tables.

6. **Exports of Wool.**—About forty-two per cent. of the exports of wool from the Commonwealth is despatched to the United Kingdom, the other leading consignees being France, Germany, Belgium, the United States of America and Japan. The following table shews for the years 1908 to 1912 the quantities of "greasy" wool exported from the Commonwealth and the principal countries of destination:—

COMMONWEALTH EXPORTS OF WOOL IN THE GREASE, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	225,336,019	210,353,060	222,880,179	230,013,473	211,386,638	1,099,968,369
France ...	104,210,690	128,402,229	154,091,890	155,347,112	151,555,672	693,607,593
Germany ...	80,073,180	102,160,121	122,297,168	105,674,113	107,523,165	517,727,767
Belgium ...	37,557,258	47,381,739	63,305,855	58,469,298	54,679,915	261,394,065
United States of America ...	20,430,274	32,846,145	11,079,242	10,154,171	8,666,125	83,195,957
Japan ...	1,972,449	5,320,455	7,869,785	6,583,686	9,339,817	31,086,192
Italy ...	1,548,760	1,915,544	3,710,785	5,644,235	4,856,997	17,676,321
Austria-Hungary ...	...	22,030	...	5,836,992	7,906,480	13,767,502
India ...	394,236	271,030	485,990	478,353	390,536	2,020,145
New Zealand ...	62,775	135,954	1,122,446	154,193	147,794	1,623,162
Canada ...	254,300	157,263	208,269	52,299	126,517	796,648
Other Countries ...	6,168	54,643	41,640	415,698	1,231,062	1,749,211
Total...	471,846,109	529,020,213	587,093,269	578,823,623	557,832,718	2,724,615,932

Similar particulars concerning the exports of "scoured and washed" wool are as follows:—

COMMONWEALTH EXPORTS OF "SCOURED AND WASHED WOOL,"*

1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
United Kingdom ...	46,401,114	34,168,844	35,571,404	35,940,841	28,305,314	180,387,517
France ...	9,383,368	16,651,577	15,861,390	13,989,442	15,037,742	70,923,519
Germany ...	9,104,503	14,583,296	14,145,596	12,148,316	10,541,771	60,523,482
Belgium ...	5,157,465	7,661,482	11,418,895	7,629,001	5,661,005	37,527,848
Japan ...	722,217	635,722	887,292	1,602,747	2,750,614	6,598,592
Italy ...	65,361	148,695	212,661	307,004	380,550	1,204,271
India ...	70,828	74,876	41,962	33,321	47,826	268,813
United States of America ...	645	151,309	5,319	...	49,849	207,122
New Zealand ...	5,871	3,972	32,488	2,934	42,927	88,192
Austria-Hungary ...	...	...	1,113	16,734	89,036	106,863
Other Countries ...	4,122	2,646	180	10,300	347,472	364,720
Total...	70,915,494	74,082,419	78,178,300	71,770,640	63,254,106	358,200,559

* Including "tops." See hereunder.

The figures for "scoured and washed wool" for 1909 include for the first time an export of tops, amounting to 496,492 lbs. and valued at £58,638. In 1910 the corresponding export was 1,123,469 lbs., valued at £134,874, in 1911, 2,513,106 lbs., valued at £275,406 and in 1912, 3,018,050 lbs. valued at £323,299.

The total value of the wool exported from the Commonwealth to each of the various countries during the five years under review was:—

TOTAL VALUE OF WOOL EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	12,022,541	10,562,929	11,447,359	11,159,335	10,418,577	55,610,741
France	4,407,940	5,594,983	6,915,177	6,016,293	6,527,854	29,452,247
Germany	3,632,708	5,006,623	6,053,873	4,851,785	5,050,974	24,593,963
Belgium	1,742,639	2,230,206	3,084,847	2,552,282	2,480,348	12,090,322
United States of America ...	881,172	1,691,389	579,605	500,015	460,275	4,112,456
Japan	125,408	261,630	420,622	459,000	703,371	1,973,031
Italy	67,021	97,756	181,457	247,804	230,436	822,474
Austria-Hungary	...	1,025	55	242,461	360,125	603,666
India	21,708	16,657	24,268	21,290	18,739	102,662
New Zealand	1,669	6,637	67,219	6,199	8,844	90,568
Canada	10,873	7,748	10,695	2,824	7,155	39,295
Other Countries	557	2,527	2,106	13,905	87,865	106,960
Total	22,914,236	25,483,110	23,777,283	26,071,193	26,354,563	127,600,385

7. Care needed in Comparing Clips.—The Customs returns do not furnish a reliable indication of increase or decrease in successive clips, since in each case they relate to the year ended 31st December. Ordinarily, therefore, they include for any year imports and exports of wool belonging to two distinct clips. A further defect in the comparability of successive clips arises as follows:—Owing to climatic or other conditions, the time of shearing may be so far delayed that one clip may include almost thirteen months' growth of wool, while the succeeding one may include little more than eleven months' growth.

8. Wool-producing Countries in Southern Hemisphere.—The next table, compiled by Messrs. Helmuth Schwartze and Co., the well-known firm of English wool brokers, furnishes interesting evidence of the relative importance of the three great wool-producing countries of the Southern Hemisphere. The figures given represent for the respective years the imports of wool into Europe and North America:—

IMPORTS OF WOOL INTO EUROPE AND NORTH AMERICA, 1901 and 1909 to 1913.

Year.	Commonwealth and New Zealand.	Cape Colony.	River Plate.	Total.
	Bales.	Bales.	Bales.	Bales.
1901	1,745,000	217,000	532,000	2,494,000
1909	2,296,000	380,000	571,000	3,247,000
1910	2,411,000	377,000	461,000	3,249,000
1911	2,524,000	376,000	499,000	3,399,000
1912	2,463,010	463,000	497,000	3,423,000
1913	2,296,000	484,000	437,000	3,217,000

As the River Plate is much larger than the Australian or Cape bale, a comparison of the number of bales would be somewhat misleading. Allowing approximately for the difference in size of the several bales, it may be said that during the last five years the importations from Australia and the Dominion of New Zealand represent about 65 per cent. of the total.

9. United Kingdom Importation of Wool.—The quantity and value of wool imported into the United Kingdom during the year 1912 from the principal wool-producing countries, furnish evidence of the important position which the Commonwealth occupies in the supply of wool to the mother country. This is shewn in the following table:—

IMPORTS OF WOOL INTO THE UNITED KINGDOM, 1912.

Country from which imported.	Quantity.	Value.	Country from which imported.	Quantity.	Value.
	lbs.	£		lbs.	£
Australia ...	285,061,874	12,589,003	Peru ...	3,068,147	130,494
New Zealand ...	184,240,455	7,701,364	Russia ...	9,672,877	379,712
Cape Colony ...	83,518,459	3,220,327	Egypt ...	3,181,432	86,272
France ...	29,539,573	1,852,916	Portugal ...	1,879,153	66,216
British India ...	55,270,119	1,590,900	China ...	1,854,106	73,808
Argentine Republic	56,251,740	2,208,681	Netherlands ...	398,820	12,238
Natal ...	37,080,640	1,324,336	Canada ...	544,550	16,881
Chile ...	20,790,605	658,726	Italy ...	1,607,740	74,827
Turkey ...	7,746,791	235,986	Persia ...	379,970	11,103
Belgium ...	4,382,214	210,357	Spain ...	112,194	3,723
Germany ...	3,836,278	169,315	Other Countries ...	1,630,040	57,563
U.S. of America ...	658,256	22,176			
Falkland Islands	4,541,618	152,412			
Uruguay ...	9,614,036	385,679	Total ...	806,855,687	33,235,015

It will be seen that of the total importations of wool into the United Kingdom, Australian wool represented over 35 per cent. of quantity and nearly 38 per cent. of value.

10. The Wool Market.—The market for wool, which had been for some years steadily improving, received a severe set-back in the early portion of the season 1907-8 by the disastrous financial crisis which occurred in America soon after the commencement of that season. The result was that buying was restricted, prices fell, and a considerable quantity of wool was withdrawn from sale and held over until the succeeding season. The season 1908-9 consequently opened rather inauspiciously, but, although prices did not reach the high level attained in 1906-7, the demand, particularly in the latter part of the season, was much more spirited than in 1907-8, and the sales must be regarded as having been very satisfactory. The season 1909-10 opened favourably and prices exhibited a distinctly upward tendency, with the result that the price averaged over 20 per cent. more than was obtained during the preceding year. The 1910-11 season opened with a fall of 10 per cent. on the closing rates of the previous season; values gradually recovered before the middle of the series, when wool was selling almost as well as at any period of the previous year; prices again declined $7\frac{1}{2}$ to 10 per cent., but made a good recovery towards the close of the season, the average for the year being 8 per cent. below that of the previous year. At the commencement of the 1911-12 season values were fully 10 per cent. lower than those ruling at the close of the previous sales. The strained international relationship existing among the European powers was mainly responsible for this.

Early in October the market experienced a further decline of $2\frac{1}{2}$ per cent. on good wools and of about 5 per cent. on inferior sorts. Towards the end of that month a hardening tendency was manifested, the increased American demand having a material effect in hastening the improvement. During the middle of the season a further advance on prices was in evidence, and this, with a few slight fluctuations, was well maintained throughout the rest of the season. The level of prices throughout 1911-12 was some $7\frac{1}{2}$ per cent. lower than during the previous season.

The 1912-13 season was particularly free from any violent fluctuations, and was a year of considerable and widespread demand and steady markets. Commencing with an advance of some 5 per cent. on closing rates of previous season, a further advance was experienced during the October sales. November witnessed a rush of fresh orders and frequently increased limits, which resulted in a further advance of about 5 per cent.

The market then firmed steadily, and at the close of the first series of sales, wools were some 10 per cent. or, say, $\frac{3}{4}$ d. to $1\frac{1}{4}$ d. per lb. above opening rates, and from 15 to 20 per cent. higher than prices ruling at same date of previous year. The second series at the beginning of January opened strong on December rates, the Yorkshire, German, and French buyers competing eagerly for every lot, merino and fine crossbred being in specially keen request. Towards the end of January the market was at the highest point of the season, prices being well maintained during the balance of the second series. The season closed with the Brisbane sales in June, when a portion of the new clip was offered, and a slightly easier feeling was noticeable owing to the tightness of the money market, particularly in Germany.

The average advance in value for all wool in Australia during the 1912-13 season was just under 20 per cent.

The average values per lb. of Australian greasy wool according to the export returns for the past ten years have been as follows:—

EXPORT VALUE PER LB. OF AUSTRALIAN GREASY WOOL, 1903 to 1912.

Year	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Average value per lb. ...	d. 8.75	d. 9.30	d. 9.83	d. 10.14	d. 10.73	d. 9.17	d. 9.35	d. 9.58	d. 8.87	d. 9.50

(i.) *Exports of Wool from each State and Quantity sold Locally.* Over 88 per cent. of the wool grown in Australia is now sold in the local markets prior to export from the Commonwealth. Buyers from the United Kingdom, France, Germany, and other European countries, also from America, Japan, China, and India, attend the sales conducted in Sydney, Melbourne, Geelong, Brisbane, Adelaide, Fremantle, Hobart, and Launceston.

The following table shews the number of bales of wool exported oversea from each State during the season ended 30th June, 1913, and the proportion sold at the local sales prior to shipment. It must be noted that as considerable quantities of wool grown in some States are sold in or shipped from others, these figures therefore do not show actual local production, but total oversea shipments and sales. The estimated quantity of wool produced in each State is given on page 293.

**EXPORTS OF WOOL TO PLACES OUTSIDE THE COMMONWEALTH, AND THE
QUANTITY SOLD LOCALLY IN THE SEVERAL STATES, DURING THE
SEASON ENDED 30th JUNE, 1913.**

State.	Oversea Exports.		Sold at Local Sales prior to Export.		Ratio of Local Sales to	
					Oversea Exports from each State.	Total Exports from C ^o wealth.
	Bales.	%	Bales.	%	%	%
New South Wales ...	773,010	44.98	664,482	43.76	85.96	38.66
Victoria ...	435,795	25.36	420,013	27.66	96.38	24.44
Queensland ...	254,495	14.81	259,150	17.06	101.83	15.08
South Australia ...	164,259	9.56	147,983	9.74	90.09	8.61
Western Australia ...	68,656	3.99	3,182	0.21	4.63	0.19
Tasmania...	22,271	1.30	23,840	1.57	107.05	1.39
Commonwealth ...	1,718,486	100.00	1,518,650	100.00	...	88.37

It will be seen that in regard to the ratio of local sales to oversea exports, Victoria's sales represent over 96 per cent. of her exports, New South Wales about 86, South Australia 90, and Queensland 102 per cent. In Tasmania and Queensland some of the wool sold locally was subsequently shipped to interstate ports. Of the total quantity sold in the Commonwealth, New South Wales and Victoria disposed of 43.76 and 27.66 per cent. respectively; Queensland, South Australia, Tasmania, and Western Australia following next in the order named.

During the season under review 1,718,486 bales of wool were shipped from the Commonwealth, of which 88.37 per cent. was sold in the Australian markets. Of this ratio New South Wales and Victoria are represented by 63, Queensland and South Australia 23½, while Tasmania and Western Australia account for the balance.

(ii.) *Exports of Wool from Commonwealth and Quantity sold Locally.* The number of bales of wool exported from the Commonwealth and sold at local sales prior to shipment during 1895, 1900, 1905, and the past five seasons is shewn in the following table:—

**EXPORTS OF WOOL FROM THE COMMONWEALTH, AND THE QUANTITY SOLD
LOCALLY, FROM 1895 to 1913.**

Year ended 30th June.					Oversea Exports.	Sold prior to Export.	Ratio of Wool sold to Exports.
					Bales.	Bales.	%
1895	...	...	...	...	1,595,652	817,333	51.22
1900	...	...	...	...	1,221,163	807,031	66.09
1905	...	...	...	...	1,218,969	926,940	76.04
1909	...	...	...	...	1,796,347	1,449,917	80.71
1910	...	...	...	...	1,921,705	1,624,561	84.54
1911	...	...	...	...	1,975,378	1,642,555	83.15
1912	...	...	...	...	2,020,547	1,700,494	84.16
1913	...	...	...	...	1,718,486	1,518,650	88.37

The steady development of the Australian wool market is clearly shewn in this table. In eighteen years the quantity sold has nearly doubled, and the ratio of wool sold to

that exported has increased from 51 per cent. in 1895 to over 88 per cent. in the season ended 30th June, 1913.

During the past season 1,518,650 bales of wool were sold in Australia and 286,151 bales in New Zealand, representing the total value of £24,642,643. This enormous quantity far exceeds the sales of any other country in the world.

(iii.) *Distribution of Wool sold in Australian Markets.* The estimated approximate distribution of wool sold in the local markets during the season 1912-13 is shown in the following table, and exhibits the world-wide representation of buyers at the Australian sales:—

**ESTIMATED APPROXIMATE DISTRIBUTION OF WOOL SOLD LOCALLY IN THE
SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON
ENDED 30th JUNE, 1913.**

Destination.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	Tas.	C'wealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
United Kingdom ...	101,424	188,229	48,205	61,388	15,021	414,267
France, Belgium, and Holland	276,220	129,988	103,472	43,954	4,013	557,647
Germany ...	189,570	55,267	81,345	17,425	1,905	345,512
Austria, Italy and other Euro- pean Countries ...	55,091	15,190	8,593	12,471	11	91,356
America ...	5,719	10,897	2,953	360	...	19,929
Japan, China and India ...	16,032	1,150	4,818	...	...	22,000
Local Woollen Mills ...	20,426	19,292	9,764	15,567	2,890	27,500
Scourers and Speculators ...						40,439
Total Sales ...	664,482	420,013	259,150	151,165	23,840	1,518,650

PERCENTAGE DISTRIBUTION.

	%	%	%	%	%	%
United Kingdom ...	15.27	44.82	18.60	40.61	63.01	27.28
France, Belgium and Holland	41.57	30.95	39.93	29.08	16.83	36.72
Germany ...	28.53	13.16	31.39	11.52	7.99	22.75
Austria, Italy and other Euro- pean Countries ...	8.29	3.62	3.31	8.25	0.05	6.02
America ...	0.86	2.59	1.14	0.24	...	1.31
Japan, China and India ...	2.41	0.27	1.86	...	...	1.45
Local Woollen Mills ...	3.07	4.59	3.77	10.30	12.12	1.81
Scourers and Speculators ...						2.66
Total Sales ...	100.00	100.00	100.00	100.00	100.00	100.00

(a) Including Western Australia, 3182 bales.

Of the total quantity sold, amounting to 1,518,650 bales, 994,515 were purchased for the Continent of Europe, 414,267 for the United Kingdom, 19,929 for America, 22,000 for Asiatic countries, 40,439 by scourers and speculators, while 27,500 bales went for consumption in the local woollen mills. Of the Continental purchases 56 per cent. went to France, Belgium and Holland, nearly 35 per cent. to Germany, and 9 per cent. to Austria, Italy and other European countries.

(iv.) *Quantities of Various Descriptions of Wool Sold in each State.* The quantities and ratios of the various descriptions of wool marketed in each State are shewn in the following tables:—

**PROPORTIONS OF THE VARIOUS DESCRIPTIONS OF WOOL SOLD LOCALLY IN
THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON
ENDED 30th JUNE, 1913.**

Description of Wool.	N S. W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Common-wealth.
	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.	Bales.
Greasy ...	592,572	406,687	198,107	144,998	3,182	23,840	1,369,386
Scoured ...	71,910	13,326	61,043	2,985	...	...	149,264
Total	664,482	420,013	259,150	147,983	3,182	23,840	1,518,650
Fleece, etc.	649,870	398,290	250,048	139,695	3,029	23,032	1,463,964
Lambs ...	14,612	21,723	9,102	8,288	153	808	54,686
Total	664,482	420,013	259,150	147,983	3,182	23,840	1,518,650
Merino ...	616,272	219,387	255,508	130,225	2,387	9,774	1,233,553
Crossbred & all strong breeds...	48,210	200,626	3,642	17,758	795	14,066	285,097
Total	664,482	420,013	259,150	147,983	3,182	23,840	1,518,650
	%	%	%	%	%	%	%
Greasy ...	89.18	96.83	76.44	97.98	100.00	100.00	90.17
Scoured ...	10.82	3.17	23.56	2.02	...	...	9.83
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Fleece, etc.	97.80	94.83	96.49	94.40	95.19	99.61	96.40
Lambs ...	2.20	5.17	3.51	5.60	4.81	3.39	3.60
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Merino ...	92.74	52.23	98.59	88.00	75.02	41.00	81.23
Crossbred & all strong breeds...	7.26	47.77	1.41	12.00	24.98	59.00	18.77
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Wool in the grease represented over 90 per cent. of total sales during the period under review. Of fleece and lambs, the former shews about 96.4, and the latter 3.6 per cent. The poor lambing in 1912 resulted in the falling off of lamb's wool from 5 per cent. in 1911-12 to 3.6 in 1912-13. The class of wool produced principally is merino, which is.

almost exclusively grown in the northern and central parts of the continent, the bulk of the merino wool sold in Victoria coming from Riverina and other parts of New South Wales. Victoria, the southern parts of South Australia and of New South Wales, and Tasmania, produce nearly every bale of crossbred and other strong bred wools.

(v.) *Percentages in each State of Various Descriptions of Wool Sold.* The following table gives the percentages of each description of wool sold in the several States during the season 1912-13:—

PERCENTAGE OF BALES OF EACH DESCRIPTION OF WOOL SOLD IN THE SEVERAL STATES TO THE TOTAL SOLD IN THE COMMONWEALTH, 1912-13.

Description of Wool.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Commonwealth.
	%	%	%	%	%	%	%
Greasy ...	43.28	29.70	14.46	10.59	0.23	1.74	100.00
Scoured ...	48.18	8.93	40.89	2.00	...	...	100.00
Fleece, etc. ...	44.39	27.21	17.08	9.54	0.21	1.57	100.00
Lambs ...	26.72	39.72	16.64	15.16	0.28	1.48	100.00
Merino ...	49.96	17.79	20.71	10.56	0.19	0.79	100.00
Crossbred and all strong breeds ...	16.91	70.37	1.28	6.23	0.28	4.93	100.00

§ 6. Hides and Sheepskins.

1. **Extent of Trade.**—In addition to the hides and sheepskins treated in the tanneries of the several States, a very considerable export trade is carried on, the total value of the hides and sheepskins exported from Australia during the five years 1908 to 1912 being no less a sum than £11,424,741, or an average of £2,284,948 per annum.

2. **Sheepskins with Wool.**—By far the largest item included in the amount mentioned in the preceding paragraph arises from the value of sheepskins with wool exported, which are shipped principally to France and the United Kingdom. Details concerning the number so exported during the five years 1908 to 1912 are as follow:—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITH WOOL, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
France ...	3,265,111	3,140,764	4,325,337	4,322,505	5,297,141	20,350,858
United Kingdom ...	3,522,791	3,968,494	3,763,002	3,306,567	3,707,050	18,267,904
Belgium ...	710,902	1,100,023	1,282,942	1,020,847	1,277,530	5,392,244
Germany ...	124,465	57,041	106,584	109,621	63,112	460,773
U.S. of America...	11,041	86,664	155,782	39,811	129,899	423,197
Italy ...	44,083	27,565	29,575	26,140	...	127,363
Canada...	...	...	10,446	...	679	11,125
New Zealand ...	225	...	100	...	661	986
Other Countries ...	...	234	...	6,869	...	7,103
Total ...	7,678,618	8,880,785	9,673,718	8,832,360	10,476,072	45,041,553

The next table furnishes corresponding particulars as to value:—

**VALUE OF SHEEPSKINS WITH WOOL EXPORTED FROM THE COMMONWEALTH,
1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	£	£	£	£	£	£
France ...	508,477	598,172	884,450	735,259	980,298	3,706,656
United Kingdom	515,937	737,592	710,229	568,618	666,962	3,199,338
Belgium ...	123,456	274,823	316,958	253,995	314,301	1,283,533
Germany ...	23,338	9,566	16,720	13,195	10,576	73,395
U.S. of America...	1,058	9,836	16,978	3,706	12,713	44,291
Italy ...	10,621	10,244	9,630	4,075	...	34,570
Canada...	...	...	1,071	...	66	1,137
New Zealand ...	25	...	25	...	113	163
Other Countries ...	...	63	...	697	...	760
Total ...	1,182,912	1,640,296	1,956,061	1,579,545	1,985,029	8,343,843

3. **Sheepskins without Wool.**—In the case of sheepskins without wool the principal countries to which export takes place are the United Kingdom and the United States of America. Particulars concerning the quantities exported are as follows:—

COMMONWEALTH EXPORTS OF SHEEPSKINS WITHOUT WOOL, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom ...	1,086,103	1,140,338	875,994	459,252	131,103	3,692,790
United States of America	167,460	1,285,946	710,001	580,582	271,028	3,025,017
France ...	101,767	3,315	23,863	21,666	55,845	206,456
New Zealand ...	5,040	9,840	15,552	9,484	1,515	41,431
Germany ...	2,812	...	14,447	...	...	17,259
Belgium ...	...	...	8,428	331	167	8,926
Canada ...	...	1,068	1,956	...	...	3,024
Italy ...	...	...	...	...	...	...
Other Countries	475	...	...	...	...	475
Total ...	1,363,657	2,440,507	1,650,241	1,081,315	459,658	6,995,378

Corresponding details concerning value are given hereunder:—

**VALUE OF SHEEPSKINS WITHOUT WOOL EXPORTED FROM THE
COMMONWEALTH, 1908 to 1912.**

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom ...	62,605	50,077	37,015	17,138	3,854	170,689
United States of America	7,390	57,795	22,544	16,295	8,730	112,754
France ...	7,477	312	1,711	1,225	5,948	16,673
New Zealand ...	272	422	514	196	27	1,431
Germany ...	184	...	538	...	...	722
Belgium ...	...	...	396	12	4	412
Canada ...	...	50	115	...	...	165
Italy ...	...	...	...	...	...	...
Other Countries	38	...	...	...	...	38
Total ...	77,966	108,656	62,833	34,866	18,563	302,884

4. **Hides.**—The Commonwealth trade in hides has now assumed considerable proportions, and during 1912 the total value of hides exported amounted to £1,007,254. The exports took place principally to the United Kingdom, Belgium, Germany, Italy, the United States of America, and France. Large quantities of hides are also imported into the Commonwealth, mainly from New Zealand and the Pacific Islands. The total value of hides imported during 1912 was £135,301.

Particulars concerning the export of hides during the past five years are as follows:—

COMMONWEALTH EXPORTS OF HIDES, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	No.	No.	No.	No.	No.	No.
United Kingdom	152,107	196,827	253,442	245,993	350,519	1,198,888
Belgium ...	63,377	79,977	41,326	80,453	108,455	373,588
Germany ...	99,745	47,335	21,810	64,536	78,059	311,485
Italy ...	43,156	11,316	45,541	68,991	117,352	286,356
U.S. of America...	15,012	56,131	21,318	29,232	82,808	205,501
France ...	20,971	20,546	11,938	15,790	15,151	84,396
Canada ...	1,050	3,737	4,000	33,519	65,407	107,713
Japan ...	1,670	6,598	4,697	6,436	5,025	24,426
Austria-Hungary	5,998	515	...	103	1,275	7,891
Sth. African Union	50	200	...	...	...	250
Other Countries...	24	166	1,975	5,815	9,717	17,697
Total ...	403,160	423,348	406,047	550,868	833,768	2,617,191

In the next table are given particulars relative to the value of hides exported:—

VALUE OF HIDES EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
	£	£	£	£	£	£
United Kingdom	106,619	177,738	294,702	279,474	430,609	1,289,142
Belgium ...	54,674	89,547	48,343	91,110	139,188	422,862
Germany ...	68,413	42,710	23,947	79,530	103,081	317,681
Italy ...	24,891	8,333	41,983	62,047	125,744	262,998
U.S. of America...	12,079	56,639	21,988	28,772	94,783	214,261
France ...	15,205	22,805	11,073	17,988	19,865	86,936
Canada ...	1,127	3,591	4,049	35,320	74,273	118,360
Japan ...	2,235	10,315	7,873	11,060	8,378	39,861
Austria-Hungary	5,360	627	...	161	1,757	7,905
Sth. African Union	42	260	...	...	...	302
Other Countries...	23	225	2,087	5,795	9,576	17,706
Total ...	290,668	412,790	456,045	611,257	1,007,254	2,778,014

The number and value of hides imported into the Commonwealth during the five years 1908 to 1912 are as follows:—

HIDES IMPORTED INTO THE COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.	Total for 5 Years.
No. ...	183,362	136,375	119,408	97,926	87,680	624,751
Value ...	£ 204,358	173,251	169,771	143,893	135,301	826,574

§ 7. Graphical Representation of Pastoral Production.

1. **General.**—As comparatively complete statistics relative to the number of horses, cattle, sheep and pigs are available from 1860, the graphical representation of the increase in numbers for the Commonwealth as a whole, shewn on page 305, covers the period from 1860 to 1912.

2. **Horses.**—With relatively unimportant fluctuations the number of horses in the Commonwealth increased at a fairly consistent rate until 1895, when a decline set in, culminating in the losses of the disastrous drought of 1902. At this latter point the number was practically identical with that for 1890. From 1902 onwards a rapid improvement has been experienced, the total for 1912 being the highest recorded.

3. **Cattle.**—The graph for cattle furnishes evidence of rapid increase in number, interrupted by three marked periods of decline, of which the first extended from 1862 to 1866, the second from 1881 to 1885, and the third from 1894 to 1902. So extensive was this last-mentioned decline that the number receded to that of 1879. From 1902 a rapid recovery took place, and the total for 1911 exceeded that existing at the end of the year 1895, though still short of the maximum attained in 1894. The 1912 figures shew a slight decline, amounting to slightly over 2 per cent., on the previous year's returns.

4. **Sheep.**—In the case of sheep the graph furnishes evidence of five periods in which the upward movement in number has been arrested or reversed. The first of these occurred between 1868 and 1871, the second between 1875 and 1877, the third during 1884, the fourth, by far the most serious, between 1891 and 1902, and the fifth during 1912. From 1902 to 1907 a rapid increase took place, succeeded by a slight decline in 1908, and a rapid advance in 1909, 1910 and 1911, the point then reached in the latter year being the highest since 1894. The return for 1912, however, again shews a considerable decrease.

5. **Pigs.**—The graph for pigs exhibits more numerous fluctuations than that for any of the other classes of live stock represented, and from 1904 to 1908 furnished evidence of a persistent decline. In 1909, however, an upward movement took place; and this was well maintained during the two succeeding years, the 1911 returns exceeding all previous records. There was, however, a considerable decrease in 1912.

SECTION VIII.

AGRICULTURAL PRODUCTION.

NOTE.—Except where otherwise stated, the “agricultural” years hereinafter mentioned are taken as ending on the 31st March.

I. Introductory.

1. **Early Attempts at Agriculture.**—The instructions issued to Captain Phillip on the 25th April, 1787, directed him, amongst other things, to proceed as soon as possible to the cultivation of the soil “under such regulations as may appear to be necessary and best calculated for securing supplies of grain and provisions.” When the settlers landed at Botany Bay, however, it was found that the glowing accounts published in England by members of Captain Cook's expedition of the fertility of the soil in that locality were considerably overdrawn. Even when Phillip and his company moved round to Port Jackson on the 26th January, 1788, matters were for a time in no better case. The ground in the immediate neighbourhood of the settlement was not suitable for the cultivation of cereal crops, and when the time came to cultivate the soil it was found that there were very few who possessed the slightest acquaintance with the art of husbandry.

2. **The First Sowing.**—In his despatch of the 15th May, 1788, Captain Phillip states that it was proposed to sow eight acres with wheat and barley, although, owing to the depredations of field mice and ants, he was doubtful of the success of the crops.

3. **Discovery of Suitable Agricultural Land.**—A branch settlement was formed at Rosehill, on the Parramatta River, towards the close of 1788, and here corn crops were successfully raised. In his despatch of 12th February, 1790, Phillip refers to the harvest at Rosehill at the end of December, 1789, as consisting of 200 bushels of wheat and 60 of barley, in addition to small quantities of oats, Indian corn, and flax. By the year 1791 there were 213 acres under crop in this locality. In 1792 a new settlement was formed at Toongabbie, about three miles westward of Parramatta, where Phillip states “there are several thousand acres of exceeding good ground.” The Hawkesbury Valley, which probably contains some of the richest land in the world, was first settled in 1794. For a long time agricultural operations in Australia were restricted to the narrow belt of country between the tableland and the east coast of New South Wales, as it was not until the year 1813 that a passage was discovered across the Blue Mountains to the fertile plains of the west.

§ 2. Progress of Agriculture.

1. **Early Records.**—In an “Account of Live Stock and Ground under Crop in New South Wales, 19th August, 1797,” Governor Hunter gives the acreage under crop as follows:—Wheat, 3361 acres; maize, 1527 acres; barley, 26 acres; potatoes, 11 acres; and vines, 8 acres.

At a muster taken in 1808 the following was the return of crops:—Wheat, 6877 acres; maize, 3389 acres; barley, 544 acres; oats, 92 acres; peas and beans, 100 acres; potatoes, 301 acres; turnips, 13 acres; orchards, 546 acres; and flax and hemp, 34 acres.

By the year 1850 the area under crop had increased to 491,000 acres, of which 198,000 acres were cultivated in what is now the State of New South Wales, and 169,000 acres in Tasmania. At the end of 1850 the area under cultivation in Victoria, which was then the Port Phillip District of New South Wales, was 52,190 acres.

The gold discoveries of 1851 and subsequent years had at first a very disturbing effect on agricultural progress, the area under crop declining from 491,000 acres in 1850 to 458,000 acres in 1854; the area under cultivation in New South Wales decreased by nearly 66,000 acres, while in Tasmania a falling-off of over 41,000 acres was experienced. The demand for agricultural products occasioned by the large influx of population was, however, soon reflected in the increased area cultivated, for at the end of 1858 the land under crop in Australia totalled over a million acres. The largest increase took place in Victoria, which returned an area of 299,000 acres. For the same year South Australia had 264,000 acres in cultivation, Tasmania 229,000 acres, and New South Wales 223,000 acres.

2. Progress of Cultivation since 1860.—The following table shews the area under crop in each of the Commonwealth States and Territories at quinquennial intervals since 1860 and during each of the last two seasons. The area under permanent artificially-sown grasses is excluded in all the States, except for the years 1860-79 in the case of New South Wales, where the acreage cannot be separated. During those years, however, the area laid down under permanent grasses could not have been very large:—

AREA UNDER CROP IN AUSTRALIA, 1860-61 to 1912-13.

Season.	New South Wales.	Victoria.	Queens- land.	South Australia.	W. Aust.	Tas- mania.	N.T.	Fed. Terr.	Common- wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	260,798	387,282	3,353	359,284	24,705	152,860	...	...	1,188,282
1865-6	378,255	448,194	14,414	547,124	38,180	159,547	...	...	1,585,714
1870-1	426,976	692,840	52,210	801,571	54,527	157,410	...	...	2,185,534
1875-6	451,139	736,520	77,347	1,111,882	47,571	142,547	...	...	2,567,006
1880-1	629,180	1,548,809	113,978	2,087,237	57,707	140,788	...	...	4,577,699
1885-6	737,701	1,867,496	198,334	2,298,412	60,058	144,761	...	...	5,306,762
1890-1	852,704	2,031,955	224,993	2,093,515	69,678	157,376	...	...	5,430,221
1895-6	1,348,600	2,413,235	285,319	2,092,942	97,821	212,703	...	...	6,450,620
1900-1	2,445,564	3,114,132	457,397	2,369,680	201,338	224,352	...	...	8,812,463
1905-6	2,840,235	3,219,962	522,748	2,255,569	364,704	230,237	...	...	9,433,455
1910-11	3,386,017	3,952,070	667,113	2,746,334	355,024	286,920	360	...	11,893,838
1911-12	3,628,513	3,640,241	526,388	2,965,338	1,072,653	270,000	375	3,509	12,107,017
1912-13	3,737,085	4,079,356	668,483	3,062,998	1,199,991	286,065	330	3,741	13,038,049

The increase in the area under crop during the past twelve years has been most marked in the case of New South Wales, Western Australia and Victoria, the respective increases being 1,291,521, 998,653, and 965,224 acres. During the same period an increase of 693,318 acres was experienced in South Australia, 211,086 in Queensland, and 61,713 acres in Tasmania. The total area under crop in the Commonwealth increased during the period by 4,225,586 acres, and the total for 1912-13 was the highest ever attained by the Commonwealth. During the past seven seasons the percentage of increase was particularly high in Western Australia, viz., 229 per cent. South Australia and New South Wales had an increase of 35½ and 31½ per cent., while Victoria, Queensland and Tasmania added to their areas under crop to the extent of 26½, 26½ and 24½ per cent. respectively.

3. Relation to Population.—From the following table it will be seen that for the Commonwealth as a whole the area under crop has, during the seasons under review, with the exception of 1911-12, increased at a rate which is somewhat greater than that

at which the population of the Commonwealth has increased. This relatively greater increase is in evidence in all the States, being most marked in the case of Western Australia, which has now a larger area under crop per head of population than any State except South Australia. Details for 1901-2 and for the past five seasons are as follows:—

TOTAL AREA UNDER CROP PER 1000 OF POPULATION.

Season.	N.S.W.	Vic.	Q'land	S. Aust	W. Aus.	Tas.	Northern Territory	Federal Terr	C'wth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	1,656	2,451	954	6,224	1,123	1,327	...	...	2,200
1908-9	1,740	2,769	962	6,018	2,254	1,405	...	...	2,337
1909-10	1,971	2,865	1,050	6,440	2,718	1,419	...	...	2,538
1910-11	2,060	3,037	1,114	6,750	3,089	1,480	109	...	2,688
1911-12	2,169	2,671	846	7,091	3,646	1,396	115	1,827	2,650
1912-13	2,102	2,955	1,050	7,122	3,920	1,451	95	1,928	2,755

4. **Relation to Total Area.**—The next table furnishes a comparison of the area under crop in the Commonwealth and the several States and Territories, with the respective total areas. For the Commonwealth as a whole, the area under crop represented for 1912-13 only about one acre in every 146. In Victoria the area under crop was about one acre in every 14, in New South Wales one in 53, in Tasmania one in 59, in South Australia one in 79, in Western Australia one in 520, in Queensland one in 642, in the Northern Territory one in 1016, and in the Federal Territory one in 156.

PERCENTAGE OF AREA UNDER CROP TO TOTAL AREA OF EACH STATE AND OF COMMONWEALTH FOR SEASONS 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aus.	Tas.	Northern Territory	Federal Terr.	C'wth.
	%	%	%	%	%	%	%	%	%
1901-2	1.147	5.273	0.113	0.919	0.035	1.386	...	...	0.442
1908-9	1.368	6.155	0.125	0.955	0.094	1.605	...	...	0.520
1909-10	1.601	6.505	0.141	1.040	0.116	1.633	...	...	0.576
1910-11	1.705	7.026	0.155	1.129	0.137	1.710	0.0001	...	0.625
1911-12	1.832	6.472	0.123	1.219	0.172	1.609	0.0002	0.609	0.636
1912-13	1.887	7.253	0.156	1.259	0.192	1.705	0.0001	0.641	0.685

5. **Artificially-Sown Grasses.**—In all the States considerable areas are devoted to artificially-sown grasses, frequently sown on uncultivated land after burning off. Statistics regarding the area under such grasses are as shewn hereunder:—

AREA UNDER SOWN GRASSES, 1901-2 and 1908-9 to 1912-13.

Season.	New South Wales.	Victoria.	Queensland.	South Australia	Western Australia	Tasmania.	Fed. Terr.	Commonwealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	467,839	162,954	34,679	23,510	3,711	314,422	...	1,007,115
1908-9	807,924	1,029,711	82,784	23,297	10,265	491,422	...	2,445,403
1909-10	888,937	988,671	108,438	23,343	9,017	439,450	...	2,457,856
1910-11	1,055,303	991,195	140,196	26,416	8,348	493,233	...	2,714,691
1911-12	1,119,738	1,041,772	166,175	30,431	5,760	505,940	50	2,869,866
1912-13	1,152,399	1,085,346	205,363	30,377	5,168	508,714	50	2,987,419

(a) Including 2 acres Northern Territory.

The considerable increase in the area of the grass lands of the Commonwealth is due in large measure to the great development of the dairying industry which has taken place during the last ten years, and which is referred to in the succeeding section. The areas contained in the above table relate in most cases to grasses sown for grazing purposes on uncultivated land, generally after burning off, and are consequently not included with "area under crop."

§ 3. Relative Importance of Crops.

1. **Various Crops.**—In the following table are furnished details concerning the areas in the several States under each of the principal crops for the season 1912-13:—

DISTRIBUTION OF CROPS IN AUSTRALIA, 1912-13.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	Total for C'wealth
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	2,230,500	2,085,216	124,963	2,079,633	793,096	25,226	3	1,014	7,339,651
Oats	84,979	439,242	4,232	155,545	127,645	62,445	...	196	874,284
Maize	176,665	19,566	117,993	176	25	...	35	56	314,936
Barley—									
Malting ...	13,189	52,311	7,400	52,769	2,384	7,824	1	2	135,880
Other	3,720	19,320	2,047	16,195	3,242	978	...	5	45,507
Beans and Peas	399	11,875	60	9,308	1,364	17,362	14	...	40,382
Rye	3,069	1,428	103	1,027	681	858	...	13	7,179
Other Cereals ...	...	...	1	2	4	...	50	...	57
Hay	944,725	1,203,728	87,643	647,069	231,690	99,839	10	2,337	3,217,041
Green Forage ...	154,272	84,460	135,354	39,954	7,339	6,304	60	13	427,756
Grass Seed ...	...	2,429	1,845	45	...	3,028	...	...	7,347
Orchards & other									
Fruit Gardens	49,329	63,209	18,556	23,905	19,540	30,575	...	60	205,174
Vines—									
Productive ...	7,414	19,234	1,325	21,353	2,392	...	...	...	51,718
Unproductive	749	5,345	103	3,855	618	...	...	...	10,670
Market Gardens	9,836	10,414	2,386	2,857	3,664	1,458	50	11	30,676
Sugar Cane—									
Productive ...	6,137	...	78,142	...	...	...	1	...	84,280
Unproductive	7,777	...	63,510	...	...	...	...	...	71,287
Potatoes	34,720	47,575	11,675	8,581	5,175	24,612	5	31	132,374
Onions	205	4,977	53	288	61	52	...	...	5,636
Other root crops	388	2,682	796	310	254	4,216	...	...	8,646
Tobacco	1,914	138	692	...	...	...	1	...	2,745
Broom Millet ...	1,828	474	391	...	...	...	...	...	2,693
Pumpkins and									
Melons	4,174	2,632	6,122	...	731	...	...	3	13,662
Hops	...	131	...	5	...	1,247	...	...	1,383
All other crops	1,096	2,550	3,091	121	86	41	100	...	7,085
Total Area ...	3,737,065	4,079,356	668,483	3,062,998	1,199,991	286,065	330	3,741	13,038,049

2. **Relative Areas of Crops in States and Territories.**—Taking the principal crops, *i.e.*, those in the case of which the cultivation amounts to more than 50,000 acres in the Commonwealth, the proportion of each in the various States and Territories to the total area under crop for the season 1912-13 is shewn in the next table. In four of the States, *viz.*, New South Wales, Victoria, South Australia, and Western Australia, wheat-growing for grain is by far the most extensive form of cultivation, while in each of these States the hay crop is second in importance. In New South Wales maize ranks third, but in Victoria, South Australia, and Western Australia, and also in the Commonwealth as a whole, the oat crop occupies third position. In Queensland, on the other hand, the three principal crops in the order of importance are sugar cane, green forage, and wheat, while in Tasmania hay, oats, and orchards occupy the leading positions. For the Commonwealth as a whole, the wheat, hay, and oat crops represent nearly 88 per cent. of the total area under crop.

PROPORTION OF AREA UNDER CHIEF CROPS, 1912-13.

Crop.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Federal Terr.	C'wealth
	%	%	%	%	%	%	%	%	%
Wheat ...	59.69	51.12	18.69	67.89	66.09	8.82	0.91	27.10	56.29
Hay ...	25.28	29.51	13.11	21.13	19.31	34.90	3.03	62.47	24.67
Oats ...	2.27	10.77	0.63	5.08	10.64	21.83	...	5.24	6.71
Maize ...	4.73	0.49	17.65	0.01	...	...	10.61	1.50	2.42
Green Forage	4.13	2.07	20.25	1.30	0.61	2.20	18.18	0.35	3.28
Orchards and Fruit Gardens	1.32	1.55	2.78	0.78	1.63	10.69	...	1.60	1.57
Sugar Cane...	0.37	...	21.19	...	...	...	0.30	...	1.19
Potatoes ...	0.93	1.17	1.75	0.28	0.43	8.60	1.52	0.83	1.02
Barley ...	0.45	1.75	1.41	2.25	0.47	3.08	0.30	0.19	1.39
Vineyards ...	0.22	0.60	0.21	0.82	0.25	...	...	...	0.48
All Other ...	0.61	0.97	2.33	0.46	0.57	9.88	65.15	0.72	0.98
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Relative Positions of States and Territories in regard to Principal Crops.—

The relative proportion of acreage of the several crops and position regarding them in each State and Territory is shewn in the following table. New South Wales exhibits the largest area under wheat, maize, and green forage; Victoria the leading position in regard to hay, oats, orchards and fruit gardens, potatoes, and barley; and Queensland first in sugar cane and second in maize and green forage. South Australia had the largest area under vineyards, and the second largest area under barley; Western Australia third position in oats and fourth in wheat, hay, and vineyards; while Tasmania was third in regard to potatoes, orchards and fruit gardens.

RELATIVE POSITIONS OF THE SEVERAL STATES AND TERRITORIES IN REGARD TO AREA UNDER EACH OF THE PRINCIPAL CROPS DURING THE SEASON 1912-13.

Crop.	N.S.W.	Vict.	Q'land.	S. Aust.	W. A.	Tas.	N. T.	Federal Terr.	C'wealth.
Wheat ...	30.39	28.41	1.70	28.34	10.81	0.35	...	...	100.00
position	1	2	5	3	4	6	8	7	
Hay ...	29.37	37.42	2.73	20.11	7.20	3.10	...	0.07	100.00
position	2	1	6	3	4	5	8	7	
Oats ...	9.72	50.24	0.49	17.79	14.60	7.14	...	0.02	100.00
position	4	1	6	2	3	5	8	7	
Maize ...	56.09	6.35	37.46	0.06	0.01	...	0.01	0.02	100.00
position	1	3	2	4	6	7	6	5	
Green Forage	36.06	19.75	31.65	9.34	1.72	1.47	0.01	...	100.00
position	1	3	2	4	5	6	7	8	
Orchards and Fruit Gardens...	24.05	30.81	9.04	11.65	9.52	14.90	...	0.03	100.00
position	2	1	6	4	5	3	8	7	
Sugar Cane	8.97	...	91.03	...	...	...	...	...	100.00
position	2	...	1	...	...	...	...	...	
Potatoes ...	26.23	35.94	8.82	6.48	3.91	18.59	0.01	0.02	100.00
position	2	1	4	5	6	3	8	7	
Barley ...	9.32	39.50	5.21	38.02	3.10	4.85	...	...	100.00
position	3	1	4	2	6	5	8	7	
Vineyards...	13.08	39.40	2.29	40.40	4.83	...	...	...	100.00
position	3	2	5	1	4	...	...	...	
All other crops	17.96	31.17	12.19	10.95	5.37	22.17	0.17	0.02	100.00
position	3	1	4	5	6	2	7	8	
Total area under crop	28.66	31.29	5.13	23.49	9.20	2.20	...	0.03	100.00
position	2	1	5	3	4	6	8	7	

4. **Acreage of Principal Crops, Commonwealth.**—The acreage devoted to each of the principal crops in the whole Commonwealth during the last five seasons is shewn below:—

ACREAGE OF CHIEF COMMONWEALTH CROPS, 1908-9 to 1912-13.

Crop.			1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
			Acres.	Acres.	Acres.	Acres.	Acres.
Wheat	...	...	5,262,473	6,586,236	7,372,456	7,427,834	7,339,651
Hay	...	...	2,452,682	2,228,029	2,258,405	2,518,288	3,217,041
Oats	...	...	676,156	698,448	676,688	616,857	874,284
Maize	...	...	323,875	364,585	414,914	340,065	314,936
Green Forage	...	...	413,511	306,082	374,862	424,440	427,756
Orchards and Fruit Gardens	...	...	173,388	178,798	185,156	194,524	205,174
Sugar Cane	...	...	140,883	142,261	155,542	144,283	155,567
Potatoes	...	...	125,685	137,070	151,515	130,463	128,889
Barley	...	...	140,243	143,013	108,424	116,466	181,387
Vineyards	...	...	59,450	58,151	59,114	60,602	62,888
All other Crops	...	...	122,897	129,626	136,762	133,195	130,976
Total	...	...	9,891,243	10,972,299	11,893,838	12,107,017	13,038,049

During the period under review the area devoted to the several crops has varied considerably, that under wheat attaining a maximum in the season 1911-12, and a minimum in 1908-9, while hay reached its maximum area in 1912-13 and its minimum in 1909-10. Of the other crops oats, green forage, orchards and fruit gardens, sugar-cane, barley, and vineyards attained their maximum areas in 1912-13, maize and potatoes in 1910-11.

§ 4. Wheat.

1. **Progress of Wheat-Growing.**—(i.) *Acreage.* The area under wheat for grain is given below for each State at various periods since 1860, and is shewn diagrammatically in the graph hereinafter:—

AREA UNDER WHEAT, 1860-1 to 1912-13.

Season.	N. S. W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	128,829	161,252	196	273,672	13,584	66,450	...	...	643,983
1865-6	131,653	178,628	2,068	410,608	22,249	73,270	...	...	818,476
1870-1	147,997	284,167	2,892	604,761	26,640	57,382	...	...	1,123,839
1875-6	133,609	321,401	4,478	898,820	21,561	42,745	...	...	1,422,614
1880-1	253,138	977,285	12,632	1,733,542	27,686	50,022	...	...	3,054,305
1885-6	264,867	1,020,082	10,093	1,922,555	29,511	30,266	...	...	3,277,374
1890-1	333,233	1,145,163	10,390	1,673,573	33,820	32,452	...	...	3,228,631
1895-6	596,684	1,412,736	27,090	1,649,929	23,241	64,652	...	...	3,774,332
1900-1	1,530,609	2,017,321	79,304	1,913,247	74,308	51,825	...	...	5,666,614
1905-6	1,939,447	2,070,517	119,356	1,757,036	195,071	41,319	...	...	6,122,746
1910-11	2,128,826	2,398,089	106,718	2,104,717	581,862	52,242	2	...	7,372,456
1911-12	2,379,968	2,164,066	42,962	2,190,782	612,104	37,208	2	742	7,427,834
1912-13	2,230,500	2,085,216	124,963	2,079,633	793,096	25,226	3	1014	7,339,651

The area devoted in the Commonwealth to the production of wheat for grain was higher for the season 1911-12 than for any previous season. Owing to climatic conditions at the time for sowing, there was a decrease for 1912-13 in New South Wales,

Victoria, South Australia, and Tasmania. In Queensland and Western Australia, however, there was a substantial increase. The maximum area under wheat for grain was attained by the several States in the following seasons:—New South Wales, and South Australia, 1911-12; Victoria, 1910-11; Queensland, 1904-5; Western Australia, 1912-13; and Tasmania, 1897-8. The average area under wheat in the Commonwealth in the past ten seasons was 6,331,361 acres. The past four seasons exceeded this average, while the previous six seasons fell short of it. According to the preliminary reports available it appears that the area of wheat reaped for grain in 1913-14 will exceed that for 1912-13, and will probably exceed 9,000,000 acres.

(ii.) *Yield.* The production during the same period for each State and for the Commonwealth as a whole is given below:—

PRODUCTION OF WHEAT, 1860-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	N. T.	Federal Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	Bushels.	Bushels.	Bushels.	Bushels.
1860-1	1,581,598	3,459,914	3,136	3,576,593	208,332	1,415,896	...	...	10,245,469
1865-6	1,013,863	3,514,227	33,088	3,587,800	231,594	1,273,766	...	...	9,654,338
1870-1	999,595	2,870,409	39,787	6,901,164	316,769	596,881	...	...	12,084,605
1875-6	1,958,640	4,978,914	97,400	10,739,834	237,171	700,062	...	...	18,712,051
1880-1	3,717,355	9,727,369	223,243	8,606,510	332,232	750,040	...	...	23,356,749
1885-6	2,733,133	9,170,538	51,598	14,612,876	339,376	524,348	...	...	27,431,869
1890-1	3,649,216	12,751,295	207,990	9,399,389	467,389	642,980	...	...	27,118,259
1895-6	5,195,312	5,669,174	123,630	5,929,300	188,077	1,164,855	...	...	18,270,348
1900-1	16,173,771	17,847,321	1,194,088	11,253,148	774,653	1,110,421	...	...	48,353,402
1905-6	20,737,200	23,417,670	1,137,321	2,143,798	2,308,305	776,478	...	...	68,520,772
1910-11	27,913,547	34,813,019	1,022,373	24,344,740	5,897,540	1,120,744	20	...	9,111,963
1911-12	25,080,111	20,891,877	285,109	20,352,720	4,358,904	659,615	20	7,991	71,636,347
1912-13	32,466,506	26,223,104	1,975,505	21,496,216	9,168,594	630,315	...	20,830	91,981,070

Notwithstanding the decrease of area under wheat, the harvest of 1912-13 was a very satisfactory one, exceeding that of the previous season by 20,844,723 bushels, an average increase of 2.89 bushels per acre for the Commonwealth as a whole.

The harvest of 1910-11 was the largest ever reaped in the Commonwealth, and exceeded by 3,130,913 bushels that of 1912-13, the next largest harvest; the 1909-10 yield was 90,413,597 bushels, these being the only three occasions on which a yield exceeding 90,000,000 bushels has been obtained. The prospects for the forthcoming harvest of 1913-14 are very good, and it appears probable that the aggregate yield for the season will approximate 110,000,000 bushels. For latest particulars to date of going to press, see Appendix.

(iii.) *Average Yields.* In the next table will be found the average yield of wheat per acre in each of the seasons 1901-2 and 1908-9 to 1912-13 and for the decennium:—

YIELD OF WHEAT PER ACRE, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W Aus.	Tasmania.	N. T.	Fed. Terr.	C'wealth
	Bushels.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.	B'shls.
1901-2	10.64	6.91	19.40	4.60	10.10	21.86	...	...	7.54
1908-9	11.11	13.12	14.87	11.45	8.63	24.08	...	...	11.89
1909-10	14.34	13.72	13.41	13.26	12.48	21.41	...	...	13.73
1910-11	13.11	14.52	9.58	11.57	10.14	21.45	10.00	...	12.90
1911-12	10.54	9.65	6.64	9.29	7.12	17.73	10.00	10.77	9.64
1912-13	14.56	12.58	15.81	10.34	11.56	24.99	...	20.54	12.53
Average for 10 seasons	12.06	11.67	12.60	10.30	10.45	19.93	5.71	16.41	11.37

As the above figures shew, there were considerable variations in the average yields, chiefly due of course to the vagaries of the season.

For the Commonwealth as a whole the average yield for 1912-13 of 12.53 bushels per acre was 1.16 above the average yield of 11.37 per acre during the last ten seasons. The highest average yield for any State was in Tasmania with 24.99 bushels per acre. Queensland, New South Wales, and Victoria produced an average of 15.81, 14.56, and 12.58 respectively. Western Australia and South Australia had an average yield of 11.56 and 10.34 bushels per acre respectively, the former being 1.11 and the latter 0.04 above the average for the decennium.

(iv.) *Relation to Population.* During the seasons embraced in the following table, the Commonwealth's production of wheat per head of population has varied between $3\frac{1}{2}$ bushels in 1902-3 and $21\frac{1}{2}$ bushels in 1910-11. The State in which wheat-growing occupies the most important position relatively to population is South Australia, which in 1909-10 had a yield which averaged close upon 64 bushels per head. Queensland is the State in which the average production of wheat per head is least. Particulars for 1901-2 and the past five seasons are as follows:—

AUSTRALIAN WHEAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	10,766	10,028	3,340	22,299	4,943	5,499	...	...	10,082
1908-9	9,915	18,670	2,159	50,275	9,477	3,655	...	...	14,789
1909-10	17,679	22,537	2,720	63,971	21,087	4,110	...	...	20,910
1910-11	16,981	26,750	1,707	59,835	21,304	5,783	6	...	21,494
1911-12	14,993	15,330	485	48,671	14,817	3,409	6	4,056	15,955
1912-13	18,265	18,995	3,104	49,981	29,950	3,196	...	10,737	19,433

2. *Australian and Foreign Wheat Yields.*—In the next table will be found a statement of the average return per acre in the principal wheat-growing countries of the world, ranging from Belgium with a maximum of $38\frac{3}{4}$ bushels per acre, to Tunis with a minimum of $5\frac{1}{2}$ bushels per acre. Australia with approximately $9\frac{1}{2}$ occupies a subordinate position; it must be remembered, however, that in this year, the yield is much below the average. (See table on previous page.)

AVERAGE YIELD OF WHEAT IN VARIOUS COUNTRIES, 1911.

Country.	Average Yield in bushels per acre.	Country.	Average Yield in bushels per acre.
Belgium ...	38.67	Italy ...	16.39
Netherlands ...	37.58	Servia ...	16.04
New Zealand ...	36.73	Spain ...	15.30
United Kingdom ...	30.96	United States ...	12.16
Sweden (1910) ...	32.48	India ...	12.02
Germany ...	30.63	Algeria ...	11.08
Bulgaria ...	26.06	Uruguay ...	10.96
Canada ...	20.80	Portugal ...	9.78
Egypt ...	21.69	Argentine Republic ...	9.75
Hungary ...	20.77	Australia ...	9.64
Japan ...	20.32	Russia in Asia ...	7.09
France ...	19.47	Russia in Europe ...	6.99
Rumania ...	19.05	Tunis ...	5.76
Austria ...	19.01		

3. *Wheat Crops of the World.*—The latest available official statistics of the production of wheat in various countries are given in the following table:—

WHEAT YIELD OF VARIOUS COUNTRIES, 1911.

Country.	Yield in Bushels.	Country.	Yield in Bushels.
United States ...	602,448,000	United Kingdom ...	64,313,456
Russia in Europe ...	445,642,680	Austria ...	57,046,056
India ...	366,930,664	Algeria ...	36,586,160
France ...	304,486,872	Egypt ...	28,940,368
Canada ...	215,851,296	Japan ...	24,848,808
Italy ...	192,343,080	Servia ...	15,307,488
Hungary ...	190,188,672	Belgium... ..	14,612,520
Argentine Republic ...	166,144,864	Portugal ...	11,846,400
Germany... ..	149,370,040	Uruguay... ..	8,754,400
Spain ...	148,454,776	Tunis ...	8,078,128
Russia in Asia ...	116,082,176	New Zealand† ...	7,913,403
Rumania... ..	90,827,264	Sweden ...	7,699,176
Bulgaria ...	71,984,576	Netherlands ...	5,340,736
Australia * ...	71,636,347	Denmark ...	4,298,976

* 1912—91,981,070. † 1912—5,179,626

Various estimates of the total quantity of wheat produced in the world have been made. That furnished by the United States Department of Agriculture gives the following figures for the five years 1908 to 1912:—

WORLD'S PRODUCTION OF WHEAT.

Year	1908.	1909.	1910.	1911.	1912.
	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.	1,000,000 bushels.
Production	3,085	3,472	3,466	3,432	3,844

In this estimate the figures given for Australia and New Zealand relate to the agricultural year ending on 31st March in the year specified.

For the five years referred to, the Australian production of wheat aggregated 364,409,000 bushels, thus representing slightly over 2 per cent. of the world's production. The total quantity of wheat produced in the British Empire during the same period of five years was approximately 3,105,000,000 bushels, so that the Australian production of wheat represented 11½ per cent. of that of the British Empire, while the British Empire production represented 18 per cent. of the world's total.

4. **Prices of Wheat.**—(i.) *British Wheat.* Since the United Kingdom is the largest importer of Australian wheat, the price of wheat in the British markets is a matter of considerable interest to the local producer. The table below gives the average prices per Imperial quarter realised for British-grown wheat:—

PRICES OF BRITISH WHEAT PER QUARTER, 1861 to 1912.

Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.	Year.	Average for Year.	Highest Weekly Average.	Lowest Weekly Average.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1861 ...	55 4	61 6	50 0	1905 ...	29 8	32 3	26 8
1871 ...	56 8	60 0	52 6	1906 ...	28 3	30 9	25 9
1881 ...	45 4	55 2	40 9	1907 ...	30 7	36 3	26 0
1891 ...	37 0	41 8	32 3	1908 ...	32 0	35 6	30 5
1901 ...	26 9	27 8	25 8	1909 ...	36 11	44 9	31 4
1902 ...	28 1	31 8	24 10	1910 ...	31 8	33 9	29 0
1903 ...	26 9	30 3	24 11	1911 ...	31 8	33 4	30 0
1904 ...	28 4	30 6	26 3	1912 ...	34 9	39 2	29 10

(ii.) *Australian and other Wheat.* Generally speaking, Australian wheat shows a grain of bright clear texture, rich in gluten, and of fine milling quality. Its excellence is attested by the high price which it realises in the home markets. The statement below shews, for the last five years, the average value per Imperial quarter of the wheat imported into the United Kingdom from the chief producing countries:—

**AVERAGE PRICE OF FOREIGN WHEAT IMPORTED INTO THE UNITED KINGDOM,
1908 TO 1912.**

Country.	Average Price per Imperial Quarter.					Country.	Average Price per Imperial Quarter.				
	1908.	1909.	1910.	1911.	1912.		1908.	1909.	1910.	1911.	1912.
	s. d.	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.	s. d.	s. d.
Australia ...	37 7	41 5	37 2	34 10	38 5	Germany ...	33 7	38 3	36 11	33 6	36 8
Russia ...	38 3	39 3	35 7	33 4	37 6	Bulgaria ...	35 10	...	32 11	35 1	36 4
Rumania ...	38 5	40 9	34 2	34 7	37 3	United States ...	36 2	38 6	37 3	34 9	35 9
British India ...	37 8	40 8	35 5	33 7	37 0	Argentina ...	35 6	39 9	34 11	33 4	35 6
Chile... ..	35 1	39 1	33 7	33 0	36 9	Canada ...	35 1	39 3	36 9	34 10	35 2

In the next table will be found a statement of the export values of Australian wheat during each of the last ten years:—

EXPORT VALUES OF AUSTRALIAN WHEAT, 1903 to 1912.

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Price per bushel	3s. 1d.	3s. 2d.	3s. 5d.	3s. 3d.	3s. 4d.	4s. 1d.	4s. 2d.	4s. 2d.	3s. 6d.	3s. 11d.

The export values here shewn are the average declared values for the successive years at the several ports of shipment in the Commonwealth.

5. Imports and Exports of Wheat and Flour.—(i.) *Quantities.* The table hereunder shews the imports, exports, and net exports of wheat and flour during 1901 and 1908 to 1912. For the sake of convenience flour has been expressed at its equivalent in wheat, one ton of flour being taken as equal to 50 bushels of grain. During 1903 the Commonwealth imports of wheat and flour were equivalent to 12,607,940 bushels of wheat. This importation was necessitated by the failure of the crop in the preceding season. In ordinary seasons the import of wheat and flour is negligible. During the past five years the export has ranged between 20,867,538 bushels in 1908 and 65,942,390 bushels in 1911, the net exports for that period averaging 43,717,000 bushels.

**IMPORTS AND EXPORTS OF WHEAT AND FLOUR, COMMONWEALTH,
1901 AND 1908 TO 1912.**

Year.	Imports.			Exports.			Net Exports.
	Wheat.	Flour.	Total.	Wheat.	Flour.	Total.	
	Bushels.	Eq. Bshls. ¹	Bushels.	Bushels.	Eq. Bshls. ¹	Bushels.	
1901	22,992	302,550	325,542	20,260,058	4,840,700	25,100,758	24,775,216
1908	142	8,900	9,042	15,027,388	5,840,150	20,867,538	20,858,496
1909	128	4,000	4,128	31,549,498	6,498,450	38,047,948	38,043,820
1910	325	8,600	8,925	47,761,895	6,997,300	54,759,195	54,750,270
1911	113	12,150	12,263	55,147,840	8,794,550	63,942,390	63,930,127
1912	1,483	7,300	8,783	32,604,248	8,404,700	41,008,948	41,000,165

1. Equivalent in bushels of wheat.

(ii.) *Destination of Exported Breadstuffs.* In the next two tables will be found the principal countries to which the Commonwealth exported wheat and flour during each

year of the period 1908-12. The countries are as shewn in the Australian Customs returns, but owing to the fact that wheat ships are frequently instructed to call for orders at various ports, the countries in which these ports are cannot be properly considered as the ultimate destination of the whole of the wheat said to be exported to them.

EXPORTS OF WHEAT FROM THE COMMONWEALTH, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for Five Years.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
U. Kingdom	11,538,962	26,030,722	36,998,625	37,475,188	23,099,670	135,143,167
Sth. African Union ...	2,475,283	3,234,603	3,001,145	2,458,780	1,784,382	12,954,193
Canary Is.*	...	238,410	3,280,215	4,756,647	3,107,257	11,382,529
France ...	19,542	24,803	918,815	5,468,993	53,773	6,485,926
Peru ...	253,865	627,417	1,270,360	1,594,610	1,201,682	4,947,934
Belgium ...	40,810	120,237	1,174,210	1,639,140	1,414,263	4,388,660
Chile ...	75,617	...	102,025	477,573	...	655,215
Japan ...	57	61,448	231,320	99,560	42,550	434,935
Germany ...	...	40,403	290,905	255,740	556,508	1,143,556
India ...	485,078	101,135	...	...	...	586,213
China ...	...	42	...	...	...	42
Italy ...	...	483,783	54,140	...	488,697	1,026,620
Egypt ...	70,045	...	...	156,485	427,988	654,518
Philippine I. ...	...	178,153	...	152	1,667	179,972
New Zealand	31,622	72,130	8,410	12,247	1,695	126,104
New Caledonia ...	722	3,275	470	642	1,400	6,509
Ceylon ...	510	308	820	1,325	1,487	4,450
Other Countries ...	35,275	332,629	430,435	750,758	421,229	1,970,326
Total ...	15,027,388	31,549,498	47,761,895	55,147,840	32,604,248	182,090,869

* For orders.

The exports of flour during the same period and the principal countries of destination were as follows:—

EXPORTS OF FLOUR FROM THE COMMONWEALTH, 1908 to 1912.

Country to which Exported.	1908.	1909.	1910.	1911.	1912.	Total for Five Years.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sth. African Union	23,662	24,460	29,535	35,136	23,420	136,213
United Kingdom	13,545	33,128	23,323	24,616	34,406	129,018
Java ...	13,492	13,346	18,808	30,964	26,138	102,748
Portuguese East Africa ...	17,689	16,496	22,517	8,421	3,807	68,930
Philippine Islands	9,790	11,803	9,359	16,634	14,507	62,093
Straits Settlements	5,665	6,250	12,374	22,036	13,551	59,876
Hong Kong ...	481	1,511	1,742	5,687	1,743	11,164
New Zealand ...	14,464	5,439	3,148	2,818	1,465	27,334
New Caledonia ...	4,056	3,897	4,049	4,174	3,582	19,758
Mauritius ...	3,461	3,090	2,894	1,974	1,107	12,526
Ceylon ...	2,716	2,257	2,287	3,046	3,483	13,789
China ...	363	300	816	1,656	1,552	4,687
Fiji ...	...	1,810	1,760	2,230	2,168	7,968
Japan ...	1	337	815	269	404	1,826
Other Countries ...	7,418	5,845	6,519	16,230	18,752	54,764
Total ...	116,803	129,969	139,946	175,891	150,085	712,694

During the five years under review the export of wheat to the United Kingdom totalled 135,143,167 bushels, or about 74 per cent. of the total export for the period. On the other hand, the export of flour to the United Kingdom aggregated only 129,018 tons, or about 18 per cent. of the total export. During the five years the heaviest exports of flour have been to South Africa, the United Kingdom, Java, Portuguese East Africa, the Philippine Islands, the Straits Settlements, and New Zealand.

(iii.) *Exports of Wheat and Flour.* From the foregoing returns it will be seen that the quantity of Australian wheat exported in the form of flour during the past five years represents, on the average, slightly over 16 per cent. of the total equivalent in wheat exported as wheat or flour from the Commonwealth. One cause of this, and probably the chief one, is the fact that Australian wheats are in considerable demand with the English millers for mixing purposes, while the Australian flour has not, up to the present, received that consideration from the English bakers which its admitted qualities undoubtedly merit. Steps which have recently been taken to bring these qualities before the British public may possibly have the effect of increasing the proportion of wheat exported in the form of flour.

A point of some interest in connection with the export of wheat, and one which bears also on the proportions of wheat and flour exports just referred to, is that concerning the quantity of phosphoric acid which this export has the effect of removing from the Commonwealth, and the necessity which exists for the return to the soil of this substance in some form.

According to an estimate furnished by the chemist to the New South Wales Department of Agriculture (F. B. Guthrie, Esq., F.C.S., etc.), the proportions of milled product from a bushel (60 lbs.) of wheat are, approximately, 42 lbs. of flour, 9 lbs. of bran, and 9 lbs. of pollard, while the percentage of phosphoric acid contained in these products is as follows:—

Flour ...	...	...	0.32 per cent., or 0.13 lbs. per bushel.
Bran ...	...	...	3.00 " 0.27 "
Pollard ...	...	...	0.90 " 0.08 "

The total amount of phosphoric acid contained in a bushel of wheat is, therefore, 0.48 lbs., of which 0.13 lbs. is in the flour and 0.35 lbs. in the offal.

During the past ten years the net exports from the Commonwealth of wheat and its milled products have amounted to 291,542,756 bushels of wheat, 1,234,131 tons of flour, and 5,592,443 bushels of bran, pollard, and sharps. On the basis of the figures quoted above this export would contain no less than 150,000,000 lbs. of phosphoric acid, the value of which as a fertiliser would be about £930,000.

(iv.) *Local Consumption of Wheat.* The estimated consumption of wheat as human food and for seed purposes in the Commonwealth during the past eight years is given in the following tables:—

WHEAT USED FOR HUMAN CONSUMPTION IN THE COMMONWEALTH.

Year.	Flour Milled.	Net Exports of Flour.		Net Quantity Available for Home Consumption.		Net Quantity Available per Head of Population.	
		Flour.	Flour in Biscuits Exp'd.	Flour.	Equivalent in Terms of Wheat.	Flour.	Equivalent in Terms of Wheat.
	Tons.	Tons.	Tons.	Tons.	Busbels.	Tons.	Busbels.
1905 ...	596,908	153,206	1,100	442,602	22,130,100	.1106	5.531
1906 ...	613,923	166,005	1,570	446,348	22,317,400	.1099	5.496
1907 ...	652,135	163,064	1,840	487,231	24,361,550	.1182	5.908
1908 ...	552,388	116,625	1,810	433,953	21,697,650	.1035	5.173
1909 ...	603,688	129,887	1,980	471,819	23,590,950	.1104	5.519
1910 ...	649,282	139,774	2,340	507,168	25,358,400	.1161	5.803
1911 ...	691,301	175,649	2,570	513,082	25,654,100	.1143	5.713
1912 ...	677,053	149,954	2,820	524,279	26,213,950	.1129	5.644
Aggregate 8 years ...	5,036,678	1,194,166	16,030	3,826,482	191,324,100	.1120	5.601

ESTIMATED QUANTITY OF WHEAT USED FOR SEED PURPOSES IN THE COMMONWEALTH.

Year.	Wheat for Seed Purposes.		
	Quantity.	Per Acre.	Per Head of Population.
	Bushels.	Bushels.	Bushels.
1905	6,747,000	.946	1.686
1906	6,664,000	.954	1.641
1907	6,261,000	.960	1.518
1908	6,429,000	.962	1.533
1909	7,322,000	.960	1.713
1910	8,332,000	.966	1.907
1911	8,282,000	.922	1.844
1912	8,484,000	.919	1.827
Aggregate for 8 years	58,521,000	.947	1.713

In addition to the above there is to be taken into consideration grain fed to poultry and other live stock. This, doubtless, varies in quantity from year to year according to the prices current for wheat, and other causes. No data is available on which to base an estimate of actual quantity so consumed. The flour available for human consumption necessarily fluctuates from year to year coincident with stocks being heavy or light. In 1907 the flour available per head of population, after deducting net exports from quantity milled, shewed a substantial increase over the average for the previous two years, this, however, being counterbalanced for by a decline in the following year. The average quantity of flour consumed per annum for the eight years under consideration was 0.112 tons per head of population, this, when expressed in equivalent terms in wheat, representing 5.6 bushels. The estimates of quantity of grain used for seed purposes have been based on data supplied by the Agricultural Departments of the several States, giving average quantities of seed used per acre for wheat sown either for grain, hay or green fodder. The average annual quantity thus used during the eight years was 1.7 bushels per head of population, and 0.947 bushels per acre sown.

6. **Value of the Wheat Crop.**—The estimated value of the wheat crop in each State and in the Commonwealth during the season 1912-13 is shewn below :—

VALUE OF THE WHEAT CROP,* 1912-1913.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'w'lth.
	£	£	£	£	£	£	£	£
Aggregate value	5,877,791	4,698,306	493,876	3,851,477	1,604,504	115,557	3,771	16,645,282
Value per acre	£2/12/8	£2/5/1	£3/19/0	£1/17/0	£2/0/6	£4/11/7	£3/14/5	£2/5/4

* Exclusive of the value of straw.

§ 5. Oats.

1. **Progress of Cultivation.**—Oats comes next in importance to wheat amongst the grain crops cultivated last season, but while wheat grown for grain accounted for over 56 per cent., oats represented only 6½ per cent. of the area under crop in the Commonwealth. The progress of cultivation of oats since 1860 is shewn in the table hereunder, and more fully in the graphs hereinafter:—

CULTIVATION OF OATS, 1860-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres
1860-1	6,535	86,337	7	2,273	507	30,303	...	125,962
1865-6	10,939	102,817	348	2,872	1,232	28,538	...	146,746
1870-1	10,683	149,309	122	6,188	2,095	30,946	...	199,343
1875-6	18,856	124,100	114	3,640	1,256	32,556	...	180,522
1880-1	17,923	134,089	116	4,355	1,319	19,853	...	177,655
1885-6	14,117	215,994	208	7,871	1,596	29,247	...	269,033
1890-1	14,102	221,048	411	12,475	1,934	20,740	...	270,710
1895-6	23,750	255,503	922	34,098	1,880	32,699	...	348,852
1900-1	29,383	362,689	385	27,988	4,790	45,073	...	470,308
1905-6	38,543	312,052	533	56,950	15,713	42,776	...	466,567
1910-11	77,991	392,681	2,537	77,674	61,918	63,887	...	676,688
1911-12	70,943	302,238	557	107,881	77,488	57,583	167	616,857
1912-13	84,979	439,242	4,232	155,545	127,645	62,445	196	874,284

2. **Total Yield.**—The total oat crop of the several States for the same period is furnished in the following table:—

COMMONWEALTH OAT CROP, 1860-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	Bushels.
1860-1	98,814	2,633,693	91	52,989	11,925	926,418	...	3,723,930
1865-6	116,005	2,279,468	4,524	42,642	19,005	688,740	...	3,150,384
1870-1	119,365	2,237,010	1,586	88,383	39,974	691,250	...	3,177,568
1875-6	352,966	2,719,795	1,482	60,749	18,840	827,043	...	3,980,875
1880-1	356,121	2,362,425	2,081	50,070	21,104	439,446	...	3,231,247
1885-6	279,107	4,692,303	1,006	97,201	23,142	784,325	...	5,877,084
1890-1	256,659	4,919,325	8,967	116,229	38,791	519,395	...	5,859,866
1895-6	374,196	2,880,045	10,887	184,012	19,326	906,934	...	4,375,400
1900-1	593,548	9,582,332	7,855	366,229	86,433	1,406,913	...	12,043,310
1905-6	883,081	7,232,425	5,858	869,146	283,987	1,200,024	...	10,474,521
1910-11	1,702,706	9,699,127	50,469	1,136,618	776,233	2,063,303	...	15,428,456
1911-12	1,152,827	4,585,326	5,783	1,349,480	961,385	1,504,633	2,337	9,561,771
1912-13	1,669,259	8,323,639	82,420	1,673,508	2,105,812	2,257,258	4,816	16,116,712

The principal oat-growing State of the Commonwealth is Victoria. During the past five seasons it has produced about 58 per cent. of the total quantity of oats grown in the Commonwealth; Tasmania, New South Wales, South Australia, and Western Australia come next in order of importance. In New South Wales and Tasmania, the highest production of oats for any season was that of 1909-10, while Victoria experienced a maximum yield in 1903-4, and Queensland, South Australia and Western Australia in 1912-13. For the Commonwealth as a whole the record yield was that of 17,541,210 bushels in the season 1903-4, while the yields of 16,248,857 and 16,116,712 for 1908-9 and 1912-13 respectively, rank second and third.

3. **Average Yield.**—The average yield per acre of the oat crop of the Commonwealth varies considerably in the different States, being highest in Tasmania and lowest in South Australia. Particulars as to average yield in each of the seasons 1901-2 and 1908-9 to 1912-13, and also for the decennium, are given in the succeeding table:—

AVERAGE YIELD OF OATS PER ACRE.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bush'ls	Bushels
1901-2	21.31	20.43	27.50	13.54	16.78	31.48	...	21.22
1908-9	18.70	26.50	21.60	16.31	12.43	34.35	...	24.03
1909-10	24.14	20.60	17.93	14.17	17.02	32.93	...	21.10
1910-11	21.83	24.70	19.89	14.63	12.54	32.30	...	22.80
1911-12	16.25	15.17	10.38	12.51	12.41	26.13	13.99	15.50
1912-13	19.64	18.95	19.48	10.76	16.50	36.15	24.57	18.43
Average for 10 Seasons	19.83	21.67	20.06	12.55	14.99	30.82	19.71	20.75

The smallest average yield per acre for the Commonwealth for the past ten-year period was that experienced in the season 1907-8, being 14.29, while the largest was that of the season 1903-4, amounting to 28.25 bushels per acre.

4. **Relation to Population.**—The State in which oat production occupies the most important position in relation to population is Tasmania, the yield for that State representing for 1912-13 about 11½ bushels per head, as compared with 3½ bushels per head for the Commonwealth as a whole. Particulars for the seasons 1901-2 and 1908-9 to 1912-13 are furnished in the succeeding table :—

OAT PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Territory.	C'wealth
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	500	5,558	83	1,306	845	9,734	...	2,559
1908-9	717	8,897	70	3,318	2,847	10,150	...	3,839
1909-10	1,219	6,197	87	3,077	4,698	12,156	...	3,408
1910-11	1,036	7,453	84	2,794	2,804	10,646	...	3,487
1911-12	689	3,365	9	3,227	3,268	7,777	1,217	2,093
1912-13	939	6,029	129	3,891	6,879	11,446	2,482	3,405

5. **Value of Oat Crop.**—The estimated value of the oat crop of the several States of the Commonwealth for the season 1912-13 is as follows :—

VALUE OF OAT CROP,* 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
Aggregate value	£250,389	£1,014,443	£17,514	£167,351	£236,904	£263,347	£722	£1,950,670
Value per acre	£2/8/11	£2/6/2	£4/2/9	£1/1/6	£1/17/1	£4/4/4	£3/13/8	£2/4/7

* Exclusive of the value of straw.

6. **Imports and Exports.**—The production of oats in the Commonwealth has not yet reached such a stage as to admit of a regular export trade in this cereal; in fact in certain years the imports have exceeded the exports, notably in 1903, 1906, 1908, and 1912. The quantities and values of oats imported into and exported from the Commonwealth during the years 1901 and 1908 to 1912 are given hereunder :—

COMMONWEALTH IMPORT AND EXPORT OF OATS, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels.	£
1901	1,526,599	153,674	2,874,334	285,347	1,347,735	131,673
1908	1,401,870	206,283	67,058	10,594	—1,334,812	—195,689
1909	320,543	32,607	339,253	35,375	18,715	2,768
1910	19,510	2,232	129,490	14,893	109,980	12,661
1911	4,522	639	391,465	46,493	386,943	45,854
1912	2,939,325	398,114	106,275	14,688	—2,833,050	—383,426

Note. — signifies net imports.

The principal countries from which the Commonwealth imports of oats have been obtained are the Dominion of New Zealand and the South African colonies, while the principal countries to which oats were exported during the period under review were the South African colonies in the earlier, and the United Kingdom, the Philippine Islands, and India in the later years.

7. *Oatmeal, etc.*—Importations of oatmeal, etc., into the Commonwealth take place principally from the United Kingdom, the United States, and Canada. The total importations of oatmeal, wheatmeal, and rolled oats during 1912 amounted to 759,072 lbs., and represented a value of £9509.

8. *Comparison with other Countries.*—A comparison of the Australian production of oats with that of the leading oat-producing countries of the world, is furnished in the following table:—

PRODUCTION OF OATS IN VARIOUS COUNTRIES, 1911.

Country.	Quantity of Oats produced	Country.	Quantity of Oats produced	Country.	Quantity of Oats produced.
	Bushels.		Bushels.		Bushels.
United States ...	894,264,000	Hungary ...	78,505,888	Rumania ...	25,411,728
Russian Empire ...	716,516,032	Sweden ...	61,501,000	New Zealand ...	19,663,056
Germany ...	435,380,480	Argentina ...	56,738,872	Netherlands ...	17,176,056
Canada ...	303,548,168	Denmark ...	39,644,536	Bulgaria ...	16,771,504
France ...	295,043,096	Belgium ...	33,921,816	Algeria ...	9,918,520
United Kingdom ...	162,933,336	Italy ...	33,609,872	Australia* ...	9,561,771
Austria ...	130,966,040	Spain ...	27,773,744	Norway ...	8,475,576

* 1912—16,116,712 bushels.

9. *Comparison of Yields.*—The average yield per acre of oats in Australia is a somewhat low one compared with the results obtained in other countries, where the cultivation of this cereal is more extensively carried on. Arranging the countries contained in the foregoing table, with the exception of Denmark, Sweden and Norway, for which particulars are not available, according to the magnitude of the average yield of oats for the year 1911, the results are as follows:—

YIELD OF OATS PER ACRE, 1911.

Country.	Average per Acre.	Country.	Average per Acre.	Country.	Average per Acre.
	Bushels.		Bushels.		Bushels.
Belgium ...	56.06	Canada ...	32.87	United States ...	23.68
Netherlands ...	50.32	France ...	29.57	Argentina ...	22.28
New Zealand ...	48.73	Austria ...	28.23	Algeria ...	22.14
Germany ...	40.73	Hungary ...	27.08	Spain ...	21.91
United Kingdom ...	40.22	Italy ...	26.46	Australia* ...	15.50
Bulgaria ...	37.56	Rumania ...	25.63	Russian Empire ...	13.53

* 1912—18.43 bushels.

10. **Price of Oats.**—The average wholesale prices of oats in the markets of the several capitals for the year 1912 are given in the following table:—

AVERAGE WHOLESALE PRICE OF OATS PER BUSHEL, 1912.

Particulars.	Sydney.	Melbourne.	Brisbane.	Adelaide.	Perth.	Hobart.
Average price per bushel ...	s. d. 3 6	s. d. 3 3	s. d. 4 3	s. d. 2 11	s. d. 3 3	s. d. 3 2

§ 6. Maize.

1. **States Growing Maize.**—The only States in which maize is at all extensively grown for grain are those of New South Wales and Queensland, the area so cropped in these two States during the season 1912-13 being 294,658 acres, or nearly 94 per cent. of the total for the Commonwealth. Of the balance, Victoria contributed 19,986 acres, South Australia 176 acres, Western Australia 25 acres, and the Northern Territory 35 acres. The climate of Tasmania prevents the growing of maize for grain in that State. In South Australia prior to 1908 particulars concerning maize had not been specially asked for on the form used in the collection of agricultural statistics. In all the States maize is grown to a greater or less extent as green forage, particularly in connection with the dairying industry.

2. **Area under Maize.**—The area devoted to the growing of maize for grain in each State, from 1875 onwards, is given in the following table, and the actual fluctuations from year to year are shewn more fully on the graph hereinafter.

The total area under maize in the Commonwealth exceeded 300,000 acres for the first time in the season 1890-1, and although it fluctuated somewhat during the succeeding seventeen years, it may be considered to have remained at about that figure. The greatest divergence during the period occurred in 1903-4, when a record total of 371,906 acres was harvested. For 1908-9 and the two following seasons a continuous increase in the area devoted to maize was in evidence, and the total of 414,914 acres for 1910-11 is the highest ever attained. The unfavourable weather conditions during 1911-12 resulted in the acreage under maize for that season being reduced by 74,849 acres as compared with its predecessor; the 1912-13 season shewed a further slight decline.

AREA UNDER MAIZE, 1875-6 to 1912-3.

Season.	N.S.W.	Victoria.	Queensland.	South Aust.	W. Aust.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	117,582	2,346	38,711	...	60	...	...	158,699
1880-1	127,196	1,769	44,109	...	32	...	...	173,106
1885-6	132,709	4,530	71,741	...	120	...	...	209,100
1890-1	191,152	10,357	99,400	...	81	...	...	300,990
1895-6	211,104	7,186	100,481	...	23	...	...	318,794
1900-1	206,051	9,389	127,974	...	91	...	...	343,505
1905-6	189,353	11,785	113,720	...	43	...	...	314,901
1910-11	213,217	20,151	180,862	*619	46	19	...	414,914
1911-12	167,712	18,223	153,916	97	29	19	69	340,065
1912-13	176,665	19,986	117,993	176	25	35	56	314,936

* Particulars for years prior to 1907-8 not available.

3. **Total Yield.**—The average yield per acre of this cereal for the season 1912-13 was not so high as that obtaining for some of the previous years, but compared favourably with the average for the decade, being only 1.22 bushels below the decennium average. The 1910-11 crop was a record one, and exceeded 13,000,000 bushels. The average annual production of maize during the last decade was 9,420,770 bushels. Particulars concerning the yield from 1875 onwards are as hereunder:—

MAIZE CROP, 1875-6 to 1912-13.

Season.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	N. T.	Fed. Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'bls.	B'shls.	Bushels.
1875-6	3,410,517	37,177	1,006,486	...	1,200	...	...	4,455,380
1880-1	4,518,897	49,299	1,409,607	...	896	...	...	5,978,699
1885-6	4,336,163	181,240	1,574,294	...	1,417	...	...	6,093,114
1890-1	5,713,205	574,083	2,373,803	...	1,526	...	...	8,662,617
1895-6	5,687,030	351,891	2,391,378	...	600	...	...	8,430,899
1900-1	6,292,745	604,180	2,456,647	...	1,399	...	...	9,354,971
1905-6	5,539,750	641,216	2,164,674	...	428	...	...	8,346,068
1910-11	7,594,130	982,103	4,460,306	*6,375	718	449	...	13,044,081
1911-12	4,506,547	792,660	3,637,562	1,490	401	400	795	8,939,555
1912-13	5,111,056	715,299	2,524,371	2,628	470	1,400	934	8,356,158

* Particulars for years prior to 1907-8 not available.

4. **Average Yield.**—In the following table particulars are given of the average yield per acre of the maize crops of the several States for the seasons, 1901-2 and 1908-9 to 1912-13, and also for the decennium:—

AVERAGE YIELD OF MAIZE PER ACRE, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	N. T.	Fed. Terr.	C'wealth
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	B'shls.	Bushels.
1901-2 ...	22.98	61.42	21.96	*	10.16	...	...	23.86
1908-9 ...	28.85	46.45	21.68	15.57	11.80	...	...	26.72
1909-10 ...	33.36	60.59	18.96	16.00	14.64	...	...	29.54
1910-11 ...	35.62	48.74	24.66	10.30	15.61	23.63	...	31.44
1911-12 ...	26.87	43.50	23.63	15.36	13.83	21.05	11.52	26.29
1912-13 ...	28.93	35.79	21.39	14.93	18.80	40.00	16.68	26.53
Average for 10 Seasons	30.14	51.60	21.79	†13.63	12.88	‡30.81	13.83	27.75

* Particulars not available.

† Average for 6 seasons.

‡ Average for 3 seasons.

|| Average for 2 Seasons.

The extraordinarily high average yield obtained in Victoria is due, in large measure, to the fact that the area under maize in that State is comparatively small and is situated in districts that are peculiarly suited to the production of this grain. The yield in New South Wales is appreciably higher than that obtained in Queensland.

5. **Value of Maize Crop.**—The value of the Commonwealth maize crop for the season 1912-13 has been estimated at £1,745,998, made up as follows:—

VALUE OF MAIZE CROP, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. T.	Federal Terr.	C'wealth.
	£	£	£	£	£	£	£	£
Aggregate value	979,619	134,119	631,093	526	112	350	179	1,745,998
Value per acre	£5/10/11	£6/14/3	£5/7/0	£2/19/9	£4/9/7	£10/0/0	£3/3/11	£5/10/11

6. **Relation to Population.**—During the past ten seasons the Commonwealth production of maize has ranged between $1\frac{1}{2}$ bushels per head of population in 1912-3 and 3 bushels per head in 1910-11. The production in Queensland, the State in which the maize yield per head of population is highest, ranged during the same period between $3\frac{3}{4}$ bushels per head in 1903-4 and $7\frac{1}{2}$ bushels per head in 1910-11. Details for the several States for the seasons 1901-2 and 1908-9 to 1912-13 are as follows:—

MAIZE PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	N. T.	Federal Terr.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2	2,795	509	5,070	*	27	...	...	1,839
1908-9	3,340	520	4,963	49	8	...	...	2,045
1909-10	4,398	907	4,342	9	8	...	...	2,491
1910-11	4,620	755	7,446	16	3	132	...	2,948
1911-12	2,786	596	5,921	4	1	121	447	2,013
1912-13	2,875	518	3,967	6	2	403	481	1,765

* Particulars not available.

7. **Australian and Foreign Maize Production.**—The following table gives the production of maize in Australia and in the leading maize producing countries of the world. The figures shew that of the total production the United States of America was responsible for 73 per cent.

PRODUCTION OF MAIZE IN VARIOUS COUNTRIES, 1911.

Country.	Production of Maize.	Country.	Production of Maize.
	Bushels.		Bushels.
United States ...	2,454,528,000	Bulgaria ...	53,911,424
Argentine Republic ...	276,051,000	Spain ...	26,807,176
Hungary ...	150,294,344	Servia ...	24,747,480
Rumania ...	107,290,736	Canada ...	18,772,696
Russian Empire ...	88,568,816	Austria ...	11,452,864
Italy ...	87,410,640	Australia* ...	9,039,855
Egypt ...	65,131,872		

* 1912, 8,356,158 bushels.

8. **Comparison of Yields.**—The average yield per acre of maize in the Commonwealth of $26\frac{1}{2}$ bushels may be regarded as highly satisfactory when compared with that of other maize producing countries. Canada, Bulgaria, Egypt, and Argentine Republic are the only countries shewing a higher average. The remaining countries shewn in the following table had average yields per acre ranging from $15\frac{1}{2}$ to $23\frac{1}{2}$ bushels.

AVERAGE YIELD OF MAIZE IN VARIOUS COUNTRIES, 1911.

Country.	Average yield per acre.	Country.	Average yield per acre.
	Bushels.		Bushels.
Canada ...	59.39	Italy ...	21.50
Bulgaria ...	34.54	Hungary ...	21.14
Egypt ...	34.17	Rumania ...	20.83
Argentine Republic ...	32.66	Servia ...	17.16
Australia* ...	26.29	Russian Empire ...	16.02
Spain ...	23.42	Austria ...	15.43
United States of America ...	23.19		

* 1912, 26.53 bushels.

9. **Oversea Imports and Exports.**—Except in the years 1902, 1903 and 1912, when many of the maize crops failed, the Commonwealth oversea trade in maize has been practically insignificant. In the first of the years mentioned nearly two million, and in each of the latter two years considerably more than a million bushels were imported. In 1908 and 1909 also, owing to the small harvests of seasons 1907-8 and 1908-9, the imports of maize were largely in excess of the exports. Details of imports and exports for 1901 and the past five years are as follows:—

COMMONWEALTH IMPORTS AND EXPORTS OF MAIZE, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value
	Bushels.	£	Bushels.	£	Bushels.	£
1901 ...	188,423	24,764	533	75	187,890	24,689
1908 ...	271,723	49,291	2,018	444	269,705	48,847
1909 ...	628,063	104,367	5,054	999	623,009	103,368
1910 ...	133,730	19,554	12,557	1,904	121,173	17,650
1911 ...	31,764	4,925	19,914	3,438	11,850	1,487
1912 ...	1,133,755	218,233	37,968	8,402	1,095,787	209,831

The principal countries to which maize has been exported from the Commonwealth are South Africa, New Zealand, and China, while the principal countries from which importations have taken place are the United States, the Pacific Islands, South Africa, and Java.

10. **Prepared Maize.**—A fairly large quantity of corn-flour is imported annually into the Commonwealth, the principal countries of supply being the United Kingdom and the United States. During the year 1912 these importations amounted to 437,635 lbs., and represented a value of £6738.

11. **Price of Maize.**—The average wholesale price of maize in the Sydney market is given in the following table for each of the years 1903 to 1912:—

AVERAGE PRICE OF MAIZE PER BUSHEL, 1903 to 1912.

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Average price per bushel...	4 1	2 4	3 3	3 0	3 2	4 7	4 2	2 11	3 0	4 8

§ 7. Barley.

1. **Area under Barley.**—The area devoted to barley in the Commonwealth has fluctuated very considerably, though with a tendency to increase during the past few years. The principal barley-growing State is Victoria, which, for the season 1912-13, accounted for 39½ per cent. of the Commonwealth area devoted to this crop; South Australia was next in importance with a percentage of 38 per cent.; the remaining 22½ per cent. being represented by New South Wales, Queensland, Tasmania and Western Australia in the order named. The figures here given relate to the areas harvested for grain; only small areas are cropped for hay, while more considerable quantities are cut for green forage. These, however, are not included in this sub-section. The area under barley for grain in the several States from 1875 onwards is shewn in the following table:—

COMMONWEALTH AREA UNDER BARLEY, 1875-6 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1875-6	4,817	31,568	613	13,969	5,014	5,939	61,920
1880-1	8,056	68,630	1,499	13,074	6,363	8,297	105,919
1885-6	5,298	74,112	406	16,493	6,178	6,833	109,320
1890-1	4,937	87,751	584	14,472	5,322	4,376	117,442
1895-6	7,590	78,438	721	14,184	1,932	6,178	109,043
1900-1	9,435	58,853	7,533	15,352	2,536	4,502	98,211
1905-6	9,519	40,938	5,201	26,250	3,665	5,372	90,945
1910-11	7,082	52,687	5,578	34,473	3,369	5,235	108,424
1911-12	10,803	53,541	1,634	40,743	3,664	6,081	116,466
1912-13	16,909	71,631	9,447	68,964	5,626	8,802	*181,387

* Including 1 acre Northern and 7 acres Federal Territory.

2. **Malting and other Barley.**—In recent years the statistics of all the States have distinguished between "malting" and "other" barley. Particulars for the Commonwealth for 1912-13 season are as follows:—

AREA UNDER MALTING AND OTHER BARLEY, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North. Ter.	Fed. Ter.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Malting barley	13,189	52,311	7,400	52,769	2,384	7,824	1	2	135,880
Other barley	3,720	19,320	2,047	16,195	3,242	978	...	5	45,507
Total ...	16,909	71,631	9,447	68,964	5,626	8,802	1	7	181,387

It will be seen that, taking the Commonwealth as a whole, about 75 per cent. of the area devoted to this grain in 1912-13 was cropped with malting barley. The proportion varies considerably in the several States.

3. **Total Yield.**—The total production of barley in the Commonwealth for the season 1912-13 amounted to 3,859,116 bushels, exceeding the yield of the previous season by 1,802,280 bushels. Particulars concerning the yields of the several States from 1875 onwards are as follows:—

COMMONWEALTH BARLEY CROP, 1875-6 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1875-6	98,576	700,665	12,260	197,315	70,196	165,357	1,244,369
1880-1	163,395	1,068,830	31,433	151,886	89,082	169,156	1,673,782
1885-6	85,606	1,302,854	9,826	218,334	89,581	176,466	1,882,667
1890-1	81,383	1,571,599	12,673	175,583	85,451	99,842	2,026,531
1895-6	96,119	715,592	7,756	140,391	18,691	138,833	1,117,382
1900-1	114,228	1,215,478	127,144	211,102	29,189	116,911	1,814,052
1905-6	111,266	1,062,139	61,816	505,916	49,497	106,042	1,896,676
1910-11	82,005	1,340,387	83,621	544,471	33,566	142,318	2,226,368
1911-12	129,008	1,024,584	15,369	702,855	37,011	148,009	2,056,836
1912-13	289,562	1,744,527	146,847	1,318,734	93,418	265,908	*3,859,116

* Including 120 bushels, Federal Territory.

4. **Value of Barley Crop.**—The estimated value of the total barley crop of the Commonwealth for the season 1911-12 was £483,151, while that for 1912-13 was £765,643. The extent to which the several States have contributed to the total is shewn in the following table:—

VALUE OF BARLEY CROP,* 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
Total value ...	£68,349	£365,634	£33,040	£232,794	£16,703	£49,099	£21	£765,643
Value per acre	£4/0/11	£5/2/1	£3/9/11	£3/7/6	£2/19/4	£5/11/7	£3/8/7	£4/4/5

* Exclusive of the value of straw.

5. **Relation to Population.**—During the seasons embraced in the following table, the quantity of barley produced in the Commonwealth has averaged about half a bushel per head of population. For the season 1912-13 the production ranged from about 3 bushels per head in South Australia to one-sixth of a bushel in New South Wales. Details for the period are as follows:—

BARLEY PRODUCTION PER 1000 OF POPULATION, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	Bushels.	Bushels	Bushels.	Bushels.	Bushels.	Bushels	Bushels
1901-2 ...	75	573	547	677	179	956	397
1908-9 ...	107	1,209	247	2,140	287	827	679
1909-10 ...	169	801	335	1,760	383	796	563
1910-11 ...	50	1,002	140	1,338	121	734	503
1911-12 ...	78	771	25	1,709	129	778	458
1912-13 ...	163	1,264	231	3,066	305	1,348	815

6. **Commonwealth Imports and Exports.**—The Commonwealth oversea trade in barley is not extensive, and in most years the imports exceed the exports. In 1902, 1903, and 1912, somewhat extensive importations of barley from the United States and New Zealand took place, owing to the shortage in local supply resulting from the severe droughts of those periods. In 1904, the excellent crop of the season 1903-4 furnished the material for a heavy exportation to Japan, the total exported thither during that year being 551,821 bushels. In 1909 also a fairly heavy export took place, mainly to the United Kingdom. Particulars of the Commonwealth oversea imports and exports of barley for the years 1901 and 1908 to 1912 are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF BARLEY, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels	£
1901 ...	55,508	7,208	17,474	1,942	— 38,034	— 5,266
1908 ...	452,462	107,126	1,148	290	—451,314	—106,836
1909 ...	51,332	12,356	188,946	28,774	137,614	16,418
1910 ...	34,684	8,498	39,146	5,155	4,462	— 3,343
1911 ...	218,316	58,922	9,420	1,256	—208,896	— 57,666
1912 ...	546,177	109,466	1,782	322	544,395	—109,144

Note. — signifies net imports.

Only in three years during the period embraced in the above table have the Commonwealth exports of barley exceeded in value the imports, viz., in 1904, 1905, and 1909. During the last ten years the total importations amounted to 2,848,963 bushels, valued at £580,319, and the total exports to 1,109,324 bushels, valued at £142,021, giving a net importation of 1,739,639 bushels in quantity and £438,298 in value.

In addition to the above, which relates to the unprepared grain, there is a small importation into the Commonwealth of pearl and Scotch barley, mainly from the United Kingdom and Japan. The total imported during 1912 amounted to only 8377 lbs. in weight, with a value of £102.

From time to time a considerable export trade in Australian pearl and Scotch barley has been carried on, mainly with the United Kingdom and New Zealand, the total exports for 1909 reaching 1,155,346 lbs., valued at £3573, and for 1910, 119,337 lbs., valued at £510. During 1911 and 1912, however, the exports were only 588 lbs., valued at £8, and 712 lbs., valued at £10, respectively.

7. Commonwealth Imports and Exports of Malt.—The importations of malt into the Commonwealth are fairly extensive, the bulk of the supply being obtained from the United Kingdom, Austria-Hungary, and Germany, but principally from the United Kingdom. Details of imports and exports for the years 1901 and 1908 to 1912 are given hereunder:—

COMMONWEALTH IMPORTS AND EXPORTS OF MALT, 1901 and 1908 to 1912.

Year.	Imports.		Exports.		Net Imports.	
	Quantity.	Value	Quantity.	Value.	Quantity.	Value.
	Bushels.	£	Bushels.	£	Bushels	£
1901	516,135	140,615	...	...	516,135	140,615
1908	210,860	67,219	528	199	210,332	67,020
1909	110,563	35,239	470	174	110,093	35,065
1910	108,168	34,696	258	66	107,910	34,630
1911	102,760	32,798	82	32	102,678	32,766
1912	128,800	45,226	117	48	128,683	45,178

8. Comparison with other Countries.—In comparison with the barley production of other countries of the world, that of Australia appears very small indeed. Particulars for some of the leading countries for the year 1911 are as follow, the Australian figures being added for the sake of comparison:—

PRODUCTION OF BARLEY IN VARIOUS COUNTRIES, 1911.

Country.	Production of Barley.	Country.	Production of Barley.
	Bushels.		Bushels.
Russian Empire ...	417,797,784	Denmark ...	20,205,128
United States ...	155,368,000	Chili ...	15,207,600
Germany ...	139,289,056	Tunis ...	13,429,168
Spain ...	83,297,864	Sweden ...	13,300,648
Hungary ...	72,565,912	Italy ...	10,444,312
Austria ...	67,238,968	Egypt ...	10,409,664
United Kingdom ...	57,803,216	Servia ...	4,423,216
France ...	47,303,408	Belgium ...	4,410,200
Japan ...	46,553,656	Netherlands ...	3,310,000
Algeria ...	45,841,496	Norway... ..	2,470,872
Canada ...	39,015,360	Australia* ...	2,056,836
Rumania ...	25,348,752	New Zealand† ...	1,253,064

* 1912 : 3,859,116 bushels. † 1912 : 1,377,610 bushels.

9. Average Yield.—The average yield per acre of barley varies considerably in the different States, being as a rule highest in Tasmania and Victoria, and lowest in Western Australia and New South Wales. Details for each State for 1901-2 and the past five seasons, and also for the decennium, are given in the following table:—

AVERAGE YIELD PER ACRE OF BARLEY, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West Aust.	Tas.	C'wealth.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1901-2 ...	17.16	21.40	23.53	15.68	13.01	27.44	20.40
1908-9 ...	7.50	23.38	18.64	18.39	10.19	24.50	20.49
1909-10 ...	18.07	17.46	14.77	16.50	12.67	24.42	17.04
1910-11 ...	11.58	25.44	14.99	15.79	9.96	27.19	20.53
1911-12 ...	11.94	19.14	9.41	17.25	10.10	24.34	17.66
1912-13 ...	17.12	24.35	15.54	19.12	16.60	30.21	21.28
Average for 10 Seasons ...	15.13	22.03	17.36	17.27	12.54	25.19	19.41

10. Price of Barley.—The average prices of barley in the Melbourne market during each of the past ten years are given in the following table:—

AVERAGE PRICE OF BARLEY PER BUSHEL, 1903 to 1912.

Particulars.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911	1912.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Malting barley	3 11	3 6	4 0	4 5	4 8	4 10	3 10	4 1	4 10½	5 11½
Cape barley ...	3 1	1 9	2 7	2 4	2 8	3 8	2 7	2 5	2 8	4 11

§ 8. Other Grain and Pulse Crops.

In addition to the grain crops already specified, the only grain and pulse crops at all extensively grown in the Commonwealth are beans, peas and rye. The total area under the two former for the season 1912-13 was 40,382 acres, giving a total yield of 847,633 bushels, or an average of 20.99 bushels per acre, being 1.64 over the average yield for the decennium ended 1912-13, which was 19.35 bushels per acre. The States in which the greatest area is devoted to beans and peas are Tasmania, Victoria and South Australia. The total area under rye in the Commonwealth during the season 1912-13 was 7179 acres, yielding 96,007 bushels, and giving an average of 13.37, this being above the average for the past ten seasons, which is 12.63 bushels per acre. Nearly 44 per cent. of the rye grown during the season was produced in New South Wales, 21 per cent. in Tasmania, and 18 per cent. in Victoria. In addition to these grain crops a small area of rice has for some years been cultivated in Queensland and the Northern Territory. The results obtained, however, have not up to the present been very satisfactory. Should rice-growing ever be seriously taken up in Australia, it is probable that large tracts of country in the northern parts of Western Australia and in the Northern Territory will be found well suited to its cultivation.

§ 9. Potatoes.

1. **Area.**—The principal potato-growing State of the Commonwealth as regards area is Victoria; Tasmania prior to 1909-10 usually ranking second and New South Wales third; the relative positions of these two States have, however, been reversed during the last four seasons. The lower figures for Tasmania relating to 1909-10 and onwards may mainly be attributed to the prevalence of the Irish potato blight in that State; New South Wales, on the other hand, has increased her acreage under this crop from 26,301 acres in 1908-9 to 43,079 in 1911-12, and 34,093 in 1912-13. The area devoted to this crop in the Commonwealth, which has fluctuated somewhat, reached its highest point in the season 1910-11, with a total of 151,515 acres.

The area under potatoes in each State from 1890 onwards is given hereunder :—

COMMONWEALTH AREA UNDER POTATOES, 1890-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1 ...	19,406	53,818	6,270	6,626	511	20,133	...	106,764
1895-6 ...	24,722	43,895	9,240	6,448	668	19,247	...	104,220
1900-1 ...	29,408	38,477	11,060	6,628	1,794	23,068	...	110,435
1905-6 ...	26,374	44,670	7,170	9,540	2,145	28,634	...	118,533
1910-11 ...	44,452	62,904	8,326	7,812	1,791	26,230	...	151,515
1911-12 ...	43,079	47,692	7,688	7,412	2,705	21,818	69	130,463
1912-13 ...	34,093	47,575	8,822	8,581	5,175	24,612	31	128,889

2. **Total Yield.**—For the season 1912-13, Victoria's production represented about 45½ per cent. of the total for the Commonwealth, New South Wales and Tasmania coming next in order with 22 and 17½ per cent. respectively. The total Commonwealth production for the season 1906-7, viz., 507,153 tons, was the highest ever attained, the yield which most nearly approached it being 449,383 tons in 1903-4. Details as to production in the several States during the period from 1890 onwards are as follows :—

COMMONWEALTH PRODUCTION OF POTATOES, 1890-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Fed. Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1890-1 ...	52,791	204,155	13,112	23,963	1,900	73,158	...	369,079
1895-6 ...	56,179	117,238	19,027	18,412	2,290	81,423	...	294,569
1900-1 ...	63,253	123,126	20,014	14,566	4,836	93,862	...	319,657
1905-6 ...	50,386	115,352	11,308	20,328	6,297	64,606	...	268,277
1910-11 ...	121,033	163,312	15,632	23,920	5,864	70,090	...	399,851
1911-12 ...	75,040	119,092	13,087	22,668	9,312	62,164	126	301,489
1912-13 ...	91,600	191,112	16,886	33,078	13,558	72,565	42	418,341

3. **Average Yield per Acre.**—The suitability of the soil, climate, and general conditions of Tasmania for potato growing is evidenced by the high yields per acre which are almost invariably obtained in the island State, the average yield during the past ten seasons being 3¾ tons per acre. The lowest average yield is that obtained in Queensland

with an average of a little under two tons for the same period. Particulars for each State for the seasons 1901-2 and 1908-9 to 1912-13, and also for the past decennium, are given hereunder:—

AVERAGE YIELD OF POTATOES, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Federal Terr.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	1.50	3.13	2.25	2.41	3.14	4.51	...	2.94
1908-9	2.73	3.19	1.85	2.67	3.30	3.46	...	3.07
1909-10	2.80	2.80	1.76	2.28	3.42	3.46	...	2.82
1910-11	2.72	2.60	1.88	3.06	3.27	2.67	...	2.64
1911-12	1.74	2.50	1.70	3.06	3.44	2.85	1.83	2.31
1912-13	2.69	4.02	1.86	3.85	2.62	2.95	1.35	3.25
Average for 10 Seasons	2.43	2.85	1.88	2.73	2.92	3.76	...	2.88

4. **Value of Potato Crop.**—The estimated value of the potato crop of each State for the season 1912-13 is furnished in the following table, together with the value per acre:—

VALUE OF POTATO CROP, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land	S. Aust.	W. Aust.	Tas.	Federal Territory.	C'wealth.
Tot. value	£415,784	£764,448	£204,825	£244,856	£111,515	£435,390	£211	£2,177,029
Value per acre ...	£12/3/11	£16/1/4	£23/5/4	£28/10/8	£21/11/0	£17/13/10	£6 16/1	£16/17/10

5. **Relation to Population.**—The average production of potatoes per annum per head of the population of the Commonwealth for the past ten seasons has been approximately 201 lbs. In Tasmania, where this crop is of far greater importance in relation to population than is the case in any other State, the production per head in 1906-7 was nearly a ton, and in 1911-12 about 6½ cwt. Details for the seasons 1901-2 and 1908-9 to 1912-13 are as follow:—

POTATO PRODUCTION PER 1000 POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas	Federal Terr.	C'wealth
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	28	104	44	42	30	655	...	84
1908-9	46	122	21	56	26	634	...	91
1909-10	62	137	23	47	22	382	...	90
1910-11	93	125	26	59	21	362	...	90
1911-12	45	90	21	55	32	327	69	67
1912-13	52	138	26	77	44	368	22	88

6. **Commonwealth Imports and Exports.**—Under normal conditions there is usually a fairly large export trade in potatoes carried on by the Commonwealth, principally with New Zealand, the Pacific Islands, and the Philippine Islands. Thus, during 1907, out of a total export of 17,842 tons, 13,346 tons went to New Zealand, 2102 tons to the Pacific

Islands, and 2112 tons to the Philippine Islands. On the other hand, when in 1902, 1903, and 1912, the droughts of those periods had brought about a shortage in some of the States, importations from New Zealand took place to the extent of 11,471 tons and 2279 tons in the former years, and 17,732 tons in the latter year. The quantities and values of the Commonwealth overseas imports and exports of potatoes for 1901 and the past five years are contained in the following table:—

COMMONWEALTH IMPORTS AND EXPORTS OF POTATOES, 1901 and 1908 to 1912

Year.	Imports.		Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£
1901	17,655	86,067	6,028	45,485	11,627	40,582
1908	129	1,112	3,375	18,560	3,246	17,448
1909	138	1,202	2,604	16,370	2,466	15,168
1910	1,665	1,313	7,089	42,395	5,424	41,082
1911	245	1,881	1,834	12,241	1,589	10,360
1912	18,151	163,249	1,619	15,331	16,532	147,918

Note. — signifies net imports.

7. Comparison with Other Countries.—The following table will furnish means for comparing the potato crop of Australia for 1911 with those of some of the leading potato-producing countries of the world for the same year:—

POTATO CROPS OF VARIOUS COUNTRIES, 1911.

Country.	Yield.	Country.	Yield.
	Tons.		Tons.
Germany	33,821,782	Italy	1,665,004
Russian Empire	31,403,068	Canada	1,650,575
France	12,569,422	Sweden	1,276,041
Austria	11,418,481	Denmark	710,418
United Kingdom	7,520,168	Japan (1909)	589,376
United States	7,318,000	Norway	533,412
Hungary	4,926,338	Australia*	301,489
Netherlands	2,506,760	New Zealand	144,912
Belgium (1909)	2,419,648	Luxemburg	125,640

* 1912, 418,341 tons.

§ 10. Other Root and Tuber Crops.

1. Nature and Extent.—Root crops, other than potatoes, are not extensively grown in Australia, the total area devoted to them for the season 1912-13 being only 17,767 acres. The principal of these crops are onions, mangolds, turnips, and "sweet potatoes" (*Batatas edulis*). Of these, onions are most largely grown in Victoria, mangolds in Tasmania and Victoria, turnips in Tasmania, and sweet potatoes in Queensland. The total area under onions in the Commonwealth during the season 1912-13 was 5636 acres, giving a total yield of 31,947 tons, and averaging 5.67 tons per acre. The area devoted in 1912-13 to root crops other than potatoes and onions, viz., 12,131 acres, yielded 93,154 tons, and gave an average of 7.68 tons per acre. The areas and yields here given are exclusive of the production of "market gardens," a reference to which will be made later.

2. **Commonwealth Imports and Exports.**—The only root crop, other than potatoes, in which any considerable oversea trade is carried on by the Commonwealth is that of onions. During the year 1912 oversea imports of onions amounted to 3763 tons, obtained principally from Japan, the United States, and New Zealand, of which total 2747 tons went to New South Wales and 837 tons to Queensland. For the same year the exports of onions totalled 3572 tons, the principal countries to which they were exported being the Philippine Islands, the Pacific Islands, and the United States of America.

§ II. Hay.

1. **Nature and Extent.**—As already stated, the most important crop of the Commonwealth is that of wheat grown for grain. Next to this in importance is the hay crop, which for the season 1912-13 represented nearly 25 per cent. of the area under crop in the Commonwealth. In most European countries the hay crop consists almost entirely of meadow and other grasses, whilst in Australia a very large proportion of the area under hay comprises cereal crops, mainly wheat and oats. A considerable quantity of lucerne hay is also made, particularly in New South Wales and Queensland. The area under hay of all kinds in the several States from 1860 onwards is given hereunder :—

AREA UNDER HAY, 1860-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1860-1	46,584	90,921	276	55,818	6,626	31,837	...	...	232,062
1865-6	61,909	97,902	1,449	101,996	8,824	30,244	...	...	302,324
1870-1	65,404	163,181	3,671	140,316	17,173	33,612	...	...	423,357
1875-6	77,125	155,274	8,531	161,429	17,319	34,758	...	...	454,436
1880-1	131,153	249,656	12,022	272,567	19,563	31,615	...	...	716,576
1885-6	219,886	421,036	28,881	312,672	19,677	41,693	...	...	1,043,845
1890-1	175,242	413,052	31,106	345,150	23,183	45,381	...	...	1,033,114
1895-6	319,296	464,482	28,609	362,972	63,804	54,748	...	...	1,293,911
1900-1	466,236	502,105	42,497	341,330	104,254	61,541	...	...	1,517,963
1905-6	438,036	591,771	37,425	317,924	124,906	64,350	...	...	1,574,412
1910-11	638,577	832,669	98,558	440,177	175,432	72,992	...	...	2,258,405
1911-12	651,866	860,205	61,299	521,182	344,032	77,466	18	2,220	2,518,288
1912-13	944,725	1,203,728	87,643	647,069	231,690	99,839	10	2,337	3,217,041

It will be seen from this table that in all the States marked fluctuations occur in the area devoted to the hay crop from year to year. These fluctuations are due to various causes, the principal being the variations in the relative prices of grain and hay, and the favourableness or otherwise of the season for a grain crop. Thus crops originally sown for grain are frequently cut for hay owing to the improved price of that commodity, or owing to the fact that the outlook for the due development of the grain is not a satisfactory one. On the other hand, improved grain prices or the prospect of a heavy yield will frequently cause crops originally intended for hay to be left for grain. The area under hay in the Commonwealth for the season 1912-13 was the highest on record, and exceeded that of the previous year by 698,753 acres.

2. **Kinds of Hay.**—Particulars concerning the kind of crop cut for hay are furnished in the returns prepared by five of the States: no information is available in the case of Tasmania.

Details for the past five seasons are given in the following table:—

KINDS OF HAY GROWN, 1908-9 to 1912-13.

Kind of Hay Crop.				1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
				Acres.	Acres.	Acres.	Acres.	Acres.
NEW SOUTH WALES—								
Wheaten	...	...	...	490,828	380,784	422,972	439,591	703,509
Oaten	...	...	...	169,441	178,968	142,805	146,162	181,400
Barley	...	...	...	1,566	1,917	2,241	2,309	1,703
Lucerne	...	...	...	54,061	68,822	70,559	68,804	56,403
Other	...	...	...	...	...	...	...	1,710
Total	...	...	...	715,896	630,491	638,577	651,866	944,725
VICTORIA—								
Wheaten	...	...	...	278,005	186,400	240,026	304,388	386,370
Oaten	...	...	...	662,141	660,525	575,791	535,146	790,268
Other	...	...	...	16,225	17,434	16,852	20,671	27,090
Total	...	...	...	956,371	864,359	832,669	860,205	1,203,728
QUEENSLAND—								
Wheaten	...	...	...	4,075	9,031	19,894	1,763	12,710
Oaten	...	...	...	9,314	16,752	13,052	5,403	19,539
Lucerne	...	...	...	48,247	42,935	61,750	51,059	50,814
Other	...	...	...	3,868	3,580	3,862	3,074	4,580
Total	...	...	...	65,004	72,298	98,558	61,299	87,643
SOUTH AUSTRALIA—								
Wheaten	...	...	...	348,307	318,197	336,439	401,648	492,980
Oaten	...	...	...	68,659	96,496	96,062	113,011	147,963
Lucerne	...	...	...	3,162	2,537	2,055	2,411	2,414
Other	...	...	...	4,796	7,218	5,621	4,112	3,712
Total	...	...	...	424,924	424,448	440,177	521,182	647,069
WESTERN AUSTRALIA—								
Wheaten	...	...	...	151,745	101,590	135,521	284,073	176,744
Oaten	...	...	...	48,309	55,006	38,637	58,393	52,904
Lucerne	...	...	...	124	254	233	167	205
Other	...	...	...	1,696	1,779	1,041	1,399	1,837
Total	...	...	...	201,874	158,629	175,432	344,032	231,690

It will be seen that wheat is the principal hay crop in New South Wales, South Australia, and Western Australia, oats in Victoria, and lucerne in Queensland.

3. Total Yield.—The Commonwealth hay crop for the season 1912-13 amounted to 3,955,311 tons, or 37.91 per cent. more than that produced in the previous season, and represented the largest ever harvested in the Commonwealth, the highest previous records being that of 3,153,196 tons for the season 1909-10, and 3,175,887 for

1910-11. For many years past the State of Victoria has been the largest hay producer in the Commonwealth, and in the season 1912-13 accounted for nearly 40 per cent. of the total production. The total yields of the several States from 1860 onwards are given hereunder:—

COMMONWEALTH HAY CROP, 1860-1 to 1912-13.

Season.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	N. T.	Fed. Ter.	Commonwealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860-1	50,927	144,211	414	71,241	8,099	62,318	...	...	337,210
1865-6	54,230	96,101	2,173	88,731	7,901	34,751	...	...	283,887
1870-1	69,602	183,708	5,506	197,149	20,833	40,763	...	...	517,561
1875-6	88,968	206,613	12,796	194,794	17,319	49,217	...	...	569,707
1880-1	174,194	300,581	23,441	261,371	19,563	35,883	...	...	815,033
1885-6	191,371	442,118	30,670	307,855	19,677	51,872	...	...	1,043,563
1890-1	213,034	567,779	50,116	310,125	25,014	52,021	...	...	1,218,089
1895-6	229,671	390,861	50,881	225,462	53,758	62,345	...	...	1,012,978
1900-1	526,260	677,757	78,758	353,662	103,813	94,198	...	...	1,834,448
1905-6	459,182	864,177	56,829	435,546	139,380	90,077	...	...	2,045,191
1910-11	843,080	1,292,410	151,252	595,064	178,891	115,190	...	...	3,175,887
1911-12	727,054	1,032,288	94,553	605,239	299,695	107,684	40	1,420	2,867,973
1912-13	1,105,350	1,572,933	119,867	714,766	255,751	183,709	10	2,925	3,955,311

4. **Value of Hay Crop.**—The following table furnishes particulars concerning the total value and the value per acre of the hay crop of the several States of the Commonwealth for the season 1912-13:—

VALUE OF HAY CROP, 1912-13.

Particulars.	New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.	N. T.	Fed. Ter.	Commonwealth.
Total value ...	£4,045,458	£4,561,506	£704,381	£2,180,036	£1,072,549	£549,237	£80	£12,887	£13,126,034
Value per acre	£4/5/8	£3/15/9	£8/0/9	£3/7/5	£4/12/7	£5/10/0	£8/0/0	£5/10/3	£4/1/7

5. **Average Yield per Acre.**—The States of the Commonwealth in which the highest average yields per acre have been obtained are those of Tasmania and Queensland, these being also the States in which the smallest areas are devoted to this crop. For the past ten seasons the lowest yield for the Commonwealth as a whole was that of 19 cwt. per acre in 1907-8, and the highest that of 31 cwt. in 1903-4. The average per decennium was 25 cwt. Particulars for the several States for the seasons 1901-2 and 1908-9 to 1912-13, and also for the decennium, are given hereunder:—

AVERAGE YIELD OF HAY PER ACRE, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	N. T.	Fed. Terr.	Com'twealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	...	1.07	1.34	1.94	0.94	0.97	1.78	...	1.20
1908-9	...	1.02	1.48	1.43	1.39	0.84	1.55	...	1.28
1909-10	...	1.56	1.37	1.34	1.35	1.23	1.53	...	1.42
1910-11	...	1.32	1.55	1.53	1.35	1.02	1.58	...	1.41
1911-12	...	1.12	1.20	1.54	1.16	0.87	1.39	2.22	1.14
1912-13	...	1.17	1.31	1.36	1.10	1.10	1.84	1.00	1.23
Average for 10 seasons	...	1.18	1.37	1.50	1.25	1.02	1.54	...	1.27

6. **Relation to Population.**—During the past ten Seasons the Commonwealth hay production per head of population has varied between 7 cwt. in 1904-5 and 16½ cwt. in 1912-13; averaging about 12½ cwt. per head for the period. The State in which the hay production per head of population is highest is South Australia. Details for the seasons 1901-2 and 1908-9 to 1912-13 are given hereunder:—

HAY PRODUCTION PER 1000 OF POPULATION.

Season.	N.S.W.	Vict.	Q'ind.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Ter.	C'with.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2 ...	339	231	241	964	463	624	...	...	529
1908-9 ...	467	1,132	167	1,532	655	717	...	...	741
1909-10 ...	608	929	168	1,462	735	615	...	...	729
1910-11 ...	513	993	253	1,463	648	594	...	...	718
1911-12 ...	440	777	154	1,472	1,045	566	12	899	639
1912-13 ...	622	1,139	138	1,662	835	932	3	1,508	836

7. **Oversea Imports and Exports.**—Under normal conditions hay, whether whole or in the form of chaff, is somewhat bulky for oversea trade, and consequently does not in such circumstances figure largely amongst the imports and exports of the Commonwealth. In 1901 and 1902, however, the exceptional demand which was created by the South African war brought about a fairly large export of hay and chaff to Natal and Cape Colony. These colonies also took a considerable quantity of Australian compressed fodder. During the year 1904, when the war between Japan and Russia was being carried on, the exports of compressed fodder to Hong Kong were valued at £42,759 and those to Japan at £23,608. The total value of the hay and chaff exported during 1901 was £406,455, as compared with £25,343 only in 1912, while the exports of compressed and other fodder, which amounted in value to £142,472 in 1904, had shrunk to £27,630 in 1912.

During 1912 the principal consignees of the hay and chaff exported from the Commonwealth were India, the Straits Settlements, and Ceylon, while the principal countries to which compressed fodder was exported were the Philippine Islands, Ceylon, and the Straits Settlements.

Imports of hay and chaff into the Commonwealth are usually unimportant, and for the year 1912 totalled 700 tons, valued at £3706, obtained from New Zealand.

8. **Hay Production in Other Countries.**—As already noted, the hay crops of most European countries consist of grasses of various kinds, amongst which clover, lucerne, sainfoin and rye grass occupy a prominent place. The statistics of hay production in these countries are not prepared on a uniform basis, and consequently any attempt to furnish an extensive comparison of the production of hay in the various countries would probably be misleading. It may be noted, however, that in the United Kingdom the production of hay from clover, sainfoin, etc., was for the year 1912 represented by 4,385,235 tons from 2,895,477 acres, while from permanent grasses a yield of 9,638,987 tons of hay was obtained from 6,678,642 acres, giving a total of 14,024,222 tons from 9,574,119 acres, or about 29½ cwt. per acre.

§ 12. Green Forage.

1. **Nature and Extent.**—In all the States of the Commonwealth a considerable area is devoted to the production of green forage, mainly in connection with the dairying industry. The total area so cropped during the season 1912-13 was 427,756 acres, which was 3316 acres more than the corresponding area for 1911-12. Of this total the New South Wales area represented about 36 per cent., that in Queensland 31½ per cent., while that in Victoria amounted to 19¾ per cent. of the total. The principal crops cut for green forage are maize, sorghum, oats, barley, rye, rape, and lucerne, while small quantities of sugar-cane also are so used. Particulars concerning the area under green forage in the several States from 1890 onwards are furnished in the following table:—

AREA UNDER GREEN FORAGE, 1890-1 to 1912-13.

Season.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1890-1	37,473	10,091	9,546	7,349	161	1,497	...	...	66,117
1895-6	66,833	25,939	19,552	7,309	430	1,883	...	...	121,946
1900-1	78,144	18,975	41,445	13,136	1,024	3,749	...	...	156,473
1905-6	95,058	34,041	66,183	23,842	1,873	4,882	...	...	225,879
1910-11	179,382	71,826	89,667	20,728	4,545	8,695	19	...	374,862
1911-12	211,693	75,177	93,049	33,673	5,021	5,627	19	181	424,440
1912-13	154,272	84,460	135,354	39,954	7,339	6,304	60	13	427,756

2. **Value of Green Forage Crops.**—The value of these crops is variously estimated in the several States, and the Commonwealth total for the season 1912-13 may be taken approximately as £1,424,000, or about £3 6s. per acre.

3. **Relation to Population.**—Particulars concerning the area under green forage per 1000 of the population of the Commonwealth and the several States for the seasons 1901-2 and 1908-9 to 1912-13 are given hereunder:—

AREA UNDER GREEN FORAGE PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2	82	27	79	38	8	24	...	...	54
1908-9	151	50	157	42	19	33	...	...	98
1909-10	74	44	174	44	23	35	...	...	71
1910-11	109	55	150	51	16	45	6	...	85
1911-12	128	57	151	82	18	30	6	102	95
1912-13	87	61	213	93	24	32	17	7	90

§ 13. Sugar-Cane.

1. **Area.** Sugar-cane is grown for sugar-making purposes in only two of the States of the Commonwealth, viz., Queensland and New South Wales, and much more extensively in the former than the latter. Thus of the total area of 155,567 acres under sugar-cane in the Commonwealth for the season 1912-13 there were 141,652 acres, or about 91 per cent., in Queensland. Sugar-cane growing appears to have been started in the Commonwealth in or about 1862, as the earliest statistical record of sugar-cane as a crop is that which credits Queensland with an area of twenty acres for the season 1862-3. In the following season the New South Wales records shew that an area of two acres was devoted to the crop in the mother State. The area under cane in New South Wales

reached its maximum in 1895-6 with a total of 32,927 acres. It then fell continuously to 1902-3, when it was lower than for any previous season since 1889-90. From 1902-3 to 1906-7 it remained practically stationary; from that time it gradually fell to 13,763 acres in 1910-11, the lowest area under sugar-cane since 1882-3. Since then a slight upward tendency has been in evidence. In Queensland, on the other hand, although fluctuations in area are in evidence throughout, the general trend has been one of satisfactory increase, the area under cane for the season 1910-11 being the highest on record, that for 1912-13 being the next highest and that for 1905-6 only a little short of it. In 1907-8 the area in Queensland declined to 126,810 acres, and in 1908-9 still further to 123,902 acres, but there was a marked increase in 1909-10, while in 1910-11 there was a further increase, when it rose to 141,779 acres. Owing to unfavourable climatic conditions the area under cane for 1911-12 shewed a falling off of 11,403 acres, or a reduction of about 8 per cent.; the 1912-13 figures, however, again shewed an increase, and were virtually the same as those for 1910-11. The area under sugar-cane in the Commonwealth from 1865 is given in the following table:—

AREA UNDER SUGAR-CANE, 1865-6 to 1912-13.

Season.	N.S.W.	Queensland.	C'wealth.	Season.	N.S.W.	Queensland.	C'wealth.
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.
1865-6	141	450	591	1900-1	22,114	108,535	130,649
1870-1	4,082	6,342	10,424	1908-9	16,981	123,902	140,883
1875-6	6,454	13,459	19,913	1909-10	14,083	128,178	142,261
1880-1	10,971	20,224	31,195	1910-11	13,763	141,779	155,542
1885-6	16,419	59,186	75,605	1911-12	13,907	130,376	144,283
1890-1	20,446	50,922	71,368	1912-13	13,914	141,652	*155,567
1895-6	32,927	77,247	110,174				

* Including 1 acre Northern Territory.

2. Productive and Unproductive Cane.—The areas given in the preceding table represent the total area on which sugar-cane was grown during the seasons specified for purposes other than green forage. The whole area, however, was not in any case cut for crushing during that season, there being always a considerable amount of "stand over" cane, as well as a small quantity required for plants. In the season 1912-13 the New South Wales total comprised 6187 acres of productive and 7777 acres of unproductive cane, while in the case of Queensland the productive cane amounted to 78,142 acres and the unproductive to 63,510 acres.

3. Yield of Cane.—Queensland statistics of the production of sugar-cane are not available for dates prior to the season 1897-8. In that season the total for the Commonwealth was 1,073,883 tons, as against 2,000,758 tons for the record season 1910-11. The average yield per acre of productive cane is much higher in New South Wales than in Queensland, the average during the last decade being 22.83 tons for the former and 15.60 for the latter State. During the six seasons 1901-2 to 1906-7 in the case of New South Wales the yield remained practically constant at about 21 tons per acre. In 1907-8 the yield in New South Wales was so excellent that, notwithstanding the comparative smallness of the area cultivated, the aggregate amount of cane produced was the largest in that State since 1898-9. In 1909-10, on the other hand, owing mainly to the decline in area of productive cane, the total yield amounted to only 131,081 tons, the lowest for the State since 1888. In 1910-11 there was a further decline in the acreage of productive cane; the yield of over 28½ tons per acre, however, was so excellent that the production exceeded that of the previous season by 29,230 tons of cane. The yield per acre for 1911-12 was approximately the same as for the previous year, but owing to the falling off in the acreage cropped, a decline to the extent of 12,512 tons was in evidence in regard to the quantity of cane produced. The area of productive cane for 1912-13 shewed an increase of 893 acres, the yield, however, was 6885 tons below that of the previous season, the average

tons per acre being 22.96 for 1912-13 as against 28.18 for 1911-12. In Queensland the average yield per acre for 1910-11 was by far the highest recorded for that State, viz., 19.45 tons, while that for 1912-13 was 12.72, being 2.88 below the average in that State for the last ten years. Particulars relative to the total and average yields of the Commonwealth sugar crops for the seasons 1901-2 and 1908-9 to 1912-13 are as follows:—

YIELD OF SUGAR-CANE, 1901-2 and 1908-9 to 1912-13.

Season.	Total Yield of Cane.			Average Yield per Acre of Productive Cane.		
	N.S.W.	Queensland.	C'wealth.	N.S.W.	Queensland.	C'wealth.
	Tons.	Tons.	Tons	Tons.	Tons.	Tons
1901-2 ...	187,711	1,180,091	1,367,802	21.36	15.10	15.73
1908-9 ...	144,760	1,433,315	1,578,075	20.83	15.54	15.91
1909-10 ...	131,081	1,163,569	1,294,650	20.23	14.53	14.95
1910-11 ...	160,311	1,840,447	2,000,758	28.65	19.45	19.96
1911-12 ...	147,799	1,534,451	1,682,250	28.18	16.02	16.65
1912-13 ...	140,914	994,212	1,135,141*	22.96	12.72	13.47

* Including 15 tons Northern Territory.

A preliminary estimate for Queensland for the season 1913-14 states that the prospects are extremely favourable. The acreage cut for crushing will probably prove to be in the neighbourhood of 103,000 acres, the estimated yield of which is 2,065,144 tons of cane, an increase of 1,070,932 tons over the previous year's returns. The sugar production is expected to be a record, the estimated yield being 241,496 tons of raw sugar.

4. **Relation to Population.**—The sugar-cane production of the Commonwealth during the past five seasons has averaged about 7 cwt. per head of population. In Queensland, the principal sugar-producing State, the production of cane per head has ranged between $1\frac{1}{2}$ tons in 1912-13 and 3 tons in 1910-11. Details for the period 1908-9 to 1912-13 are as follows:—

SUGAR PRODUCTION PER 1000 OF POPULATION.

State.		1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
		Tons	Tons	Tons	Tons.	Tons.
New South Wales	...	93	81	98	89	79
Queensland	...	2,573	2,014	3,072	2,498	1,562
Commonwealth	...	373	299	452	375	240

5. **Quality of Cane.**—The quantity of cane required to produce a ton of sugar varies considerably not only with the district in which the cane is grown but also with the season. In Queensland, for instance, during the seasons 1902-3 to 1906-7 the sugar content of the cane crushed continuously diminished, so that while in 1902-3 the quantity of cane used in producing a ton of sugar was 8.33 tons, in the season 1906-7 the quantity required was 9.33 tons, the production in the former case being approximately 12 per cent. and in the latter $10\frac{3}{4}$ per cent. of the weight of cane crushed. For the season 1907-8, the cane was of much better quality, and the quantity required to produce a ton of sugar was only 8.84 tons, the sugar content representing in this case somewhat more than $11\frac{1}{4}$ per cent. of the weight of cane crushed. In 1908-9, owing in large measure to the effect of frosts, the quantity of cane required to produce one ton of sugar was increased to 9.49 tons, the sugar thus representing only about $10\frac{1}{2}$ per cent. of the weight of cane crushed, while in 1909-10 only 8.65 tons of cane were required to each ton of sugar, the sugar representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed. The especially favourable weather existing throughout 1910 resulted in a very high average quantity of cane per acre being obtained, while the moisture which caused this led to a slight diminution in the saccharine density as compared with the previous year.

During 1910-11 and the two following seasons the quantity of cane required to produce one ton of sugar was 8.73, 8.85, and 8.79 tons in the order named, the sugar produced representing about $11\frac{1}{2}$ per cent. of the weight of cane crushed in each of those years, while the average quantity of sugar obtained per acre crushed was 2.23 tons in 1910, 1.81 in 1911, and 1.45 in 1912. It should be noted that in 1901-2 no less than 9.76 tons of cane were needed to produce a ton of sugar. It may be remarked in this connection that the systematic study of the beet in Germany shewed that by suitable culture its sugar content might be greatly increased, and this is by no means impossible in the case of sugar-cane.

6. Sugar Bounties.—The provision of bounties or similar aids to the sugar-growers of the Commonwealth early occupied the attention of the Commonwealth Parliament, the object in view being that of assisting the industry, whilst at the same time diminishing the employment of coloured labour in connection therewith. An account of the various Acts in connection with sugar bounties and sugar excise tariffs will be found on pages 394 to 396 of the previous issue of the Year Book. In 1912 the Sugar Excise Repeal Act and the Sugar Bounty Abolition Act were passed by the Federal Parliament, conditionally on the Queensland Parliament approving of legislation prohibiting the employment of coloured labour in connection with the industry. The State Sugar Cultivation Act, the Sugar Growers Act, and the Sugar Growers' Employees Act, of 1913, having been approved of, the 1912 Federal Acts, which repeal all previous enactments in regard to excise on sugar and bounty on cane, came into force by proclamation in July, 1913.

7. Beet Sugar.—During the past few years an effort has been made to revive the sugar-beet industry in Victoria. During 1910-11 £554 was paid as bounty on 1847 tons of beet, £2244 on 7481 tons during 1911-12, and £1667 on 6207 tons during 1912-13.

8. Cost of Bounties.—The amounts paid by the Commonwealth Government in sugar bounties and the expenses in connection therewith during the period 1908-9 to 1912-13 are shewn in the following table:—

SUGAR BOUNTIES AND EXPENSES, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Bounties ...	477,090	402,132	630,762	543,503	370,306
Expenses ...	6,616	5,645	6,862	*	*
	483,706	407,777	637,624	*	*

* Not available

9. Collection of Sugar Excise.—The table hereunder contains particulars concerning the net amount of excise duty on sugar collected in respect of the several States for the years 1901-2 to 1912-13. In this table refunds and drawbacks have been deducted and the requisite adjustment has been made between the States:—

SUGAR EXCISE, 1901-2 and 1908-9 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	119,577	40,189	10,658	781	8,184	10,156	189,545
1908-9 ...	250,329	229,409	116,215	69,267	49,434	36,122	750,776
1909-10 ...	137,672	229,981	126,626	9,373	32,526	12,538	548,716
1910-11 ...	*	*	*	*	*	*	794,645
1911-12 ...	*	*	*	*	*	*	748,670
1912-13 ...	*	*	*	*	*	*	518,508

* Amounts not allocated to separate States.

10. **Production by White and Coloured Labour.**—The following table contains particulars furnished by the Commonwealth Treasury concerning the production of sugar in New South Wales and Queensland since 1902, and furnishes an indication of the decline in the employment of coloured labour in the sugar industry during that period :—

SUGAR PRODUCTION, 1902-3 to 1912-13.

Season.	New South Wales.			Queensland.			Commonwealth.		
	Cane Sugar Produced by—			Cane Sugar Produced by—			Cane Sugar Produced by—		
	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.	White Labour.	Coloured Labour.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1902-3 ...	19,434	1,526	20,960	12,254	65,581	77,835	31,688	67,107	98,795
1903-4 ...	19,236	2,561	21,797	24,406	65,456	89,862	43,642	68,017	111,659
1904-5 ...	17,812	1,838	19,650	39,404	105,616	145,020	57,216	107,454	164,670
1905-6 ...	18,019	1,964	19,983	50,897	101,362	152,259	68,916	103,325	172,242
1906-7 ...	21,805	1,613	23,418	127,539	54,619	182,158	149,344	56,232	205,576
1907-8 ...	23,247	934	29,181	162,480	22,583	185,063	190,727	23,517	214,244
1908-9 ...	14,351	964	15,315	132,049	18,358	150,407	146,400	19,322	165,722
1909-10 ...	13,839	815	14,654	118,298	14,451	132,749	132,137	15,266	147,403
1910-11 ...	17,936	892	18,828	191,406	15,776	207,182	209,342	16,668	226,010
1911-12 ...	16,412	887	17,299	160,091	10,371	170,462	176,503	11,258	187,761
1912-13 ...	16,483	240	16,723	106,088	6,453	112,541	122,571	6,693	129,264

During the period under review the proportion of sugar produced by coloured labour declined from 68 per cent. of the total for 1902-3 to 5 per cent. of the total for 1912-13. The sugar production of 1913-14 is expected to be a record, the estimated yield being 241,496 tons of raw sugar.

11. **Imports and Exports of Sugar.**—Notwithstanding the increase in the production of sugar in evidence in the Commonwealth during recent years, Australia's over-sea import trade in cane sugar remained fairly extensive until 1906, the principal countries engaged in supplying this commodity being Java, Mauritius, and Fiji. In 1907 the exports of sugar exceeded the imports for the first time, the value of the net exports being £166,121. In 1908 the imports exceeded the exports by 4811 tons in quantity and £37,080 in value; while in the following year the excess of imports over exports was 91,647 tons, value £1,004,308. In 1910 and 1911 the net imports fell in quantity to 27,424 tons and 25,945 tons respectively, the corresponding values being £297,958 and £283,518. During 1912-13 the net imports amounted to 96,224 tons, being the highest recorded during the period under review. The principal countries to which sugar is exported are South African Union, the Pacific Islands, the United Kingdom, and Portuguese East Africa, but the bulk of the sugar exported from the Commonwealth is not of Australian origin, but merely a re-export of sugar produced elsewhere. Thus of 2257 tons exported during 1912, only 90 tons were of Australian origin. The sugar so re-exported comes mainly from Fiji, Java, and Mauritius. Particulars concerning the imports and exports of cane sugar for 1901 and the past five years are as follow :—

IMPORTS AND EXPORTS OF CANE SUGAR, 1901 and 1908 to 1912.

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£	tons.	£
1901 ...	98,544	1,239,550	4,738	68,876	93,806	1,170,674
1908 ...	19,552	245,495	14,741	208,415	4,811	37,080
1909 ...	99,698	1,122,863	8,051	118,555	91,647	1,004,308
1910 ...	34,008	406,709	6,584	108,751	27,424	297,958
1911 ...	33,276	404,474	7,331	120,956	25,945	283,518
1912 ...	98,481	1,189,763	2,257	39,614	96,224	1,150,149

§ 14. Vineyards.

1. **Nature and Extent.**—The introduction of the vine into Australia has been set down by different investigators as at various dates, the years 1815 and 1828 being principally favoured. It would seem, however, that the vine was really brought out with the First Fleet, which initiated the colonisation of Australia, in 1788, and that consequently the Australian vine is as old as Australian settlement. As already mentioned a report of Governor Hunter's gives the area under vines in 1797 as 8 acres. From New South Wales the vine spread to Victoria and South Australia, and these States have now far outstripped the mother State in the area which they have devoted to its cultivation. In Queensland and Western Australia also, vine-growing has been carried on for many years, but in neither State has the industry progressed with the rapidity attained in Victoria and South Australia. In Tasmania the climate is not favourable to the growth of grapes. The purposes for which grapes are grown in Australia are three in number, viz.—(i.) for wine-making, (ii.) for table use, (iii.) for drying. The total area under vines in the several States from 1860 onwards is given in the following table:—

COMMONWEALTH VINEYARDS, 1860-1 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres	There are no vineyards in Tasmania.	Acres.
1860-1	1,584	1,138	—	3,180	335		6,237
1865-6	2,126	4,078	110	6,629	634		13,577
1870-1	4,504	5,466	416	6,131	710		17,227
1875-6	4,459	5,081	376	4,972	675		15,563
1880-1	4,800	4,980	739	4,337	659		15,515
1885-6	5,247	9,775	1,483	5,142	624		22,271
1890-1	8,044	20,686	1,981	9,535	1,024		41,270
1895-6	7,519	30,275	2,021	17,604	2,217		59,636
1900-1	8,441	30,634	2,019	20,158	3,325		64,577
1905-6	8,754	26,402	2,044	23,603	3,541		64,344
1910-11	8,321	23,412	1,634	22,952	2,795		59,114
1911-12	8,231	24,193	1,371	23,986	2,821		60,602
1912-13	8,163	24,579	1,428	25,208	3,010		62,388

The area devoted to vines in the Commonwealth attained its highest point in the season 1904-5, when a total of 65,673 acres was reached. Each of the five following seasons shewed a diminution, the area in 1909-10 being reduced to 58,151 acres; this decline was in evidence in all the States. An increase took place in each of the three succeeding seasons, the total Commonwealth area under vines amounting to 62,388 acres in 1912-13.

The wine-growing industry in Australia, more particularly in Victoria and New South Wales, received a severe check on account of various outbreaks of phylloxera which took place in different parts of these States. With a view to its eradication extensive uprooting of vineyards in the infested areas was undertaken, while further planting within such areas, except with phylloxera-resisting vines, was prohibited.

In the States of Victoria, Queensland, South Australia, and Western Australia satisfactory increases in the area under vines were recorded in 1912-13, while in New South Wales a small decrease was shewn.

2. **Wine Production.**—The production of wine in Australia has not increased as rapidly as the suitability of soil and general favourableness of conditions would appear to warrant. The cause of this is probably twofold, being in the first place due to the fact that the Australians are not a wine-drinking people and consequently do not provide a local market for this product, and in the second to the fact that the new and comparatively unknown wines of Australia find it difficult to establish a footing in the markets of the old world, owing to the competition of well-known brands. Active steps are being taken in various ways to bring the Australian wines under notice, and it may be confidently expected that when their qualities are duly recognised the wine production of Australia will exhibit a rapid development. Particulars concerning the quantity of wine produced in the several States during 1901-2 and the past five seasons are contained in the table given hereunder:—

AUSTRALIAN WINE PRODUCTION, 1901-2 and 1908-9 to 1912-13.

Season.	New South Wales.	Victoria	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No production of wine in Tasmania.	Gallons.
1901-2 ...	868,479	1,981,475	148,835	2,631,563	185,735		5,816,087
1908-9 ...	736,262	1,437,106	77,698	3,132,247	132,488		5,515,801
1909-10 ...	808,870	991,941	91,410	2,569,797	140,559		4,602,577
1910-11 ...	805,600	1,362,420	74,306	3,470,058	153,665		5,866,049
1911-12 ...	850,210	983,423	57,358	2,921,597	162,559		4,975,147
1912-13 ...	719,100	1,206,111	54,627	3,974,838	149,132		6,103,808

3. **Relation to Population.**—In relation to population the area of the vineyards of the several States exhibits a well-marked decline during the first eight seasons under review, the Commonwealth total having fallen during the period from 17 to 13 acres per 1000 of the population; during the past four seasons, however, the relation has remained stationary. Details for the period are furnished in the succeeding table:—

AREA OF VINEYARDS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	C'wealth
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres	Acres.
1901-2 ...	6	24	4	58	19	...	17
1908-9 ...	5	20	3	57	12	...	14
1909-10 ...	5	18	3	57	11	...	13
1910-11 ...	5	18	3	56	10	...	13
1911-12 ...	5	18	2	57	10	...	13
1912-13 ...	5	18	2	59	10	...	13

4. **Imports and Exports.**—During the past ten years the importations of wine into the Commonwealth have exhibited a marked fluctuation, declining continuously in value from £161,945 in 1901 to £96,870 in 1904, then increasing continuously to £133,114 in 1908 and decreasing again in 1909 to £116,021, and again increasing in the two following years; the 1912 importations, valued at £169,207, exhibited a slight decrease as compared with the previous year. The principal countries of origin of wine imported into Australia are France, Spain, Portugal, and Germany, the greater portion of the sparkling wines coming from France and of still wines from Spain and Portugal. Particulars relative to the importations of wine into the Commonwealth during 1901 and the past five years are given hereunder:—

COMMONWEALTH IMPORTS OF WINE, 1901 and 1908 to 1912.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	55,341	165,472	220,813	104,700	57,245	161,945
1908	56,806	68,252	125,058	106,108	27,006	133,114
1909	47,669	60,946	108,615	91,046	24,975	116,021
1910	50,982	70,908	121,885	97,296	29,106	126,402
1911	78,115	75,446	153,561	153,561	31,363	184,924
1912	67,851	85,874	153,725	132,830	36,377	169,207

The principal countries to which wine is exported from Australia are the United Kingdom and New Zealand, a small but fairly regular export trade being also carried on with India, Ceylon, Fiji, and the South Sea Islands. Details concerning the exports of wine from Australia during 1901 and the past five years are given in the following table:—

COMMONWEALTH EXPORTS OF WINE, 1901 and 1908 to 1912.

Year.	Quantity.			Value.		
	Sparkling.	Other.	Total.	Sparkling.	Other.	Total.
	Gallons.	Gallons.	Gallons.	£	£	£
1901	2,936	863,147	866,083	6,972	122,751	129,723
1908	2,824	728,421	731,245	4,541	98,333	102,874
1909	2,649	974,413	977,062	4,455	121,116	125,571
1910	2,830	949,033	951,913	5,340	123,593	128,933
1911	2,343	1,097,624	1,099,967	4,126	147,608	151,734
1912	2,467	784,371	786,838	4,803	116,327	121,130

The sparkling wine included in the foregoing table consists mainly of foreign wine re-exported.

5. **Other Viticultural Products.**—In addition to grapes for wine-making purposes, large quantities are grown in all the States for table use, while, particularly in Victoria and South Australia, the drying of raisins and currants is also carried on. The quantities of table grapes grown in the several States during 1901-2 and the past five seasons are as follows:—

TABLE GRAPES, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1901-2	3,475	5,110	750*	2,800*	1,100*	...	13,235
1908-9	3,150	3,018	1,336	3,214	1,982	...	12,700
1909-10	4,181	3,189	1,520	2,496	3,928	...	15,314
1910-11	3,914	2,913	1,254	2,531	3,200	...	13,812
1911-12	4,223	3,102	973	2,123	3,506	...	13,927
1912-13	3,893	2,624	1,046	2,194	1,891	...	11,648

* Estimated.

Statistics of the quantities of raisins and currants dried are available for a series of years for Victoria and South Australia, and are as follows for 1901-2 and the past five seasons:—

RAISINS AND CURRANTS DRIED, 1901-2 and 1908-9 to 1912-13.

Season.	Raisins.		Currants.	
	Victoria.	Sth. Australia.	Victoria.	Sth. Australia.
	lbs.	lbs.	lbs.	lbs.
1901-2	3,083,665	822,080	285,157	382,256
1908-9	7,788,032	3,136,784	1,336,048	2,738,288
1909-10	9,076,928	3,114,496	3,069,696	4,037,824
1910-11	8,883,616	3,891,440	2,956,128	4,509,232
1911-12	11,527,488	3,880,912	5,240,368	5,229,840
1912-13	12,283,824	3,947,776	5,413,744	5,847,296

In New South Wales, Queensland, and Western Australia also small quantities of raisins and currants are dried, but until recently no statistics were collected. The quantity so produced in New South Wales amounted to 100,912 lbs. in 1907-8, 160,720 lbs. in 1908-9, 165,984 lbs. in 1909-10, 297,472 lbs. in 1910-11, 429,968 lbs. in 1911-12, and 494,704 in 1912-13. In Western Australia 176,400 lbs. were dried during 1912-13. For Queensland there are no particulars available.

§ 15. Orchards and Fruit Gardens.

1. **Nature and Extent.**—Fruit-growing has made rapid progress in the Commonwealth during recent years, the area devoted thereto having increased in the past ten years by no less than 56,936 acres. The States in which the increase was most marked were:—Tasmania, 17,900 acres; Victoria, 12,731 acres; Western Australia, 12,668 acres; and South Australia, 6529 acres. During the same period the Queensland fruit-growing area increased 5738 acres, while that in New South Wales exhibited a slight increase of 1310 acres. The increased areas in Tasmania and Western Australia are mainly due to extensive plantings of apple trees with a view to the possibilities of the London market for fresh fruit. The total area devoted to orchards and fruit gardens in the several States is given hereunder:—

COMMONWEALTH ORCHARDS AND FRUIT GARDENS, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2...	48,448	50,055	14,396	16,315	6,076	11,485	...	...	146,775
1908-9...	45,880	54,946	14,104	20,855	15,016	20,757	...	...	171,558
1909-10	45,892	56,108	15,360	21,760	15,609	24,069	...	...	178,798
1910-11	47,533	57,375	15,153	22,410	16,738	25,934	13	...	185,156
1911-12	48,385	59,985	16,817	23,214	18,194	27,868	13	48	194,524
1912-13	49,329	63,209	18,556	23,905	19,540	30,575	...	60	205,174

The varieties of fruit grown differ materially in various parts of the several States, and range between such fruits as the pineapple, paw-paw, mango, and guava of the tropics, and the strawberry, the raspberry, and the currant of the colder parts of the

temperate zone. The principal varieties grown in Victoria are the apple, plum, peach, apricot, cherry, and pear. In New South Wales citrus fruits (orange, lemon, etc.) occupy the leading position, although apples, pears, peaches, plums, and apricots are also extensively grown. In Queensland the banana, the orange, the pineapple, the apple, the peach, the mango, and the plum are the varieties most largely grown. In South Australia, in addition to the apple, pear, peach, apricot, plum, orange, and lemon, the almond and the olive are also largely grown. In Western Australia the apple, orange, peach, pear, plum, fig, and apricot are the sorts chiefly grown, while in Tasmania, although the apple represents four-fifths of the area in that State devoted to fruit-growing, small fruits, such as the currant, raspberry, and gooseberry, are very extensively grown, and the balance of the area is mainly occupied with the pear, plum, apricot, peach, and cherry. The following table gives the acreage under the principal kinds of fruit grown, and the quantity and value of fruit produced. With the exception of Tasmania the acreages shewn are exclusive of young trees not yet bearing. The acreages for each kind of fruit in Victoria is not available:—

PARTICULARS OF THE PRINCIPAL KINDS OF FRUIT GROWN IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON 1912-13.

Fruit.	N S.W. (a)	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
Apples ... acres	6,507	...	627	6,501	5,153	24,370	...
bushels	548,801	2,086,756	15,904	448,468	311,316	1,331,324	...
£	137,201	390,378	7,157	140,621	95,340	316,189	1,086,886
Apricots ... acres	1,082	...	67	1,892	282	1,111	...
bushels	88,782	138,881	4,967	116,366	17,823	62,306	...
£	24,415	59,024	993	42,178	8,392	18,691	153,693
Bananas ... acres	108	...	7,037	...	127	...	...
bunches	46,570	...	1,139,404	...	(b) 2,021	...	...
£	3,730	...	142,426	...	1,718	...	147,874
Lemons ... acres	2,712	...	54	530	119	...	...
bushels	276,397	48,170	4,288	31,515	14,796	...	...
£	55,279	18,264	1,394	9,455	3,976	...	88,368
Nectarines { acres	6,306	...	771	1,244	851	113	...
and { bshls.	468,814	294,861	35,131	72,509	53,023	(c)	...
peaches { £	117,203	88,394	7,027	32,569	21,209	(c)	(d) 266,402
Oranges ... acres	9,843	...	2,396	1,742	1,121	...	...
bushels	817,500	44,039	319,544	137,031	84,121	...	...
£	204,375	20,368	87,875	61,664	27,076	...	401,358
Pineapples acres	12	...	2,584	...	...	...	...
dozen	4,220	...	679,646	...	...	...	...
£	360	...	67,965	...	...	...	68,325
Pears ... acres	1,522	...	77	840	627	2,232	...
bushels	142,104	669,898	3,347	91,533	43,778	149,546	...
£	46,184	43,472	1,004	28,723	15,778	29,909	165,070
Other fruits acres	8,658	...	2,992	4,126	1,540	2,749	...
£	244,027	260,757	49,336	78,223	37,042	(e) 20,088	689,473
Total ... acres	36,750	48,868	16,605	16,875	9,820	(f) 30,575	(f) 158,993
£	832,774	880,657	365,177	393,433	210,531	384,877	3,067,449

(a) Including Federal Territory. (b) Bushels. (c) Separate figures not available. (d) Excluding Tasmania. (e) Including nectarines and peaches. (f) Including unproductive area in Tasmania.

2. Relation to Population.—In relation to population the orchards and fruit gardens of the Commonwealth have exhibited an increase during the seasons under review, more than compensating for the decline which was experienced in the case of vineyards. Taking the two in conjunction, the relative area under vineyards and orchards has, during the period, remained practically stationary at about 55 acres per 1000 of population. Details for 1901-2 and the past five seasons are as follow :—

AREA OF ORCHARDS AND FRUIT GARDENS PER 1000 OF POPULATION.

Season.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tas.	N.T.	Fed. Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2...	35	41	28	45	31	66	...	...	38
1908-9...	29	44	25	54	58	109	...	...	41
1909-10	28	44	27	55	59	125	...	...	41
1910-11	29	44	25	55	60	134	4	...	42
1911-12	29	44	27	56	62	144	4	25	43
1912-13	28	46	29	56	64	155	...	31	43

3. Commonwealth Imports and Exports.—A very considerable fruit trade, both import and export, is carried on by the Commonwealth with overseas countries, the major portion of the importations consisting of dried fruits, while the bulk of the exports is made up of fresh fruits. Amongst the imports the principal dried fruits are currants, dates, sultanas, and raisins, and the principal fresh fruits bananas, oranges, lemons, and apples. The currants imported are mainly of Greek origin, the dates of Arabian, Persian, and Turkish, the raisins mainly of Spanish, and the sultanas of Turkish origin. Of the fresh fruits imported during 1912 the bananas were chiefly from Fiji, the oranges and lemons from Italy, and the apples from the United States and Canada. The dried fruits imported during the year were valued at £81,913, and the fresh at £217,796. In 1907 a very marked development in the trade in Australian dried fruits took place, the total export for the year being valued at £76,872, of which £71,506 represented Australian fruits and £5366 re-exports of foreign fruits. In 1908 the total export of dried fruits from Australia was valued at £35,359, of which £33,111 represented Australian fruits, and £2248 re-exports of foreign fruits. There was a further decline in 1909, when the total value of exports was only £13,013, made up of £11,826 of Australian produce, and £1187 of re-exports. There was a small increase in the total exports in 1910 and 1911, the exports for the latter year amounting to £23,900: 1912 experienced a further and more substantial increase, the value of dried fruits exported in that year being £48,012; of this sum £46,491 represented Australian produce, and the balance of £1521 re-exports of foreign fruits. The principal consignees of Australian dried fruits exported were United Kingdom and New Zealand. The fresh fruits exported during the year were valued at £468,306, and consisted mainly of apples. These were all of Australian origin with the exception of re-exports valued at £809. The principal countries to which these were sent were the United Kingdom, Germany, New Zealand, Brazil, United States of America, and India. The value of the net imports of dried fruits for the year 1912 was £33,901, whilst in the case of fresh fruits, the value of the net exports was £250,510, the largest net export value yet recorded.

Particulars concerning the overseas imports and exports of dried fruits for 1901 and the last five years are as follows :—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF DRIED FRUITS,
1901 AND 1908 TO 1912.**

Year.	Oversea Imports.		Oversea Exports.		Net Imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	14,265,731	179,305	831,996	14,206	13,433,735	165,099
1908	10,351,443	99,518	2,509,640	35,359	7,841,803	64,159
1909	13,242,198	121,059	1,089,730	13,013	12,152,468	108,046
1910	9,885,118	89,076	973,171	14,765	8,911,947	74,311
1911	6,526,498	68,942	1,291,795	23,900	5,234,703	45,042
1912	7,484,432	81,913	2,545,779	48,012	4,938,653	33,901

Similar information with regard to the Commonwealth oversea trade in fresh fruits for the same period is contained in the table given hereunder:—

**COMMONWEALTH OVERSEA IMPORTS AND EXPORTS OF FRESH FRUITS,
1901 AND 1908 TO 1912.**

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Centals.	£	Centals.	£	Centals.	£
1901	*	45,955	*	167,926	*	121,971
1908	166,341	107,666	377,926	263,307	211,585	155,641
1909	250,311	146,081	372,308	243,699	121,997	97,618
1910	137,733	90,100	500,661	322,694	362,928	232,594
1911	338,749	197,924	651,837	420,780	313,088	222,856
1912	306,079	217,796	674,695	468,306	368,616	250,510

* Not available.

4. Jams and Jellies.—A small oversea trade in jams and jellies is carried on by the Commonwealth, the value of the imports for the year 1912 amounting to £13,081, and of the exports to £23,089. The country of origin of the bulk of the importations is the United Kingdom, while the destinations of the exports are principally South Africa, Ceylon, Philippine Islands and Fiji. Particulars relative to imports and exports for 1901 and the last five years are as follow:—

COMMONWEALTH OVERSEA TRADE IN JAMS AND JELLIES, 1901 and 1908 to 1912.

Year.	Oversea Imports.		Oversea Exports.		Net Exports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
1901	1,312,377	23,358	4,140,072	64,389	2,827,695	41,031
1908	280,525	6,898	1,714,060	26,155	1,433,535	19,257
1909	334,738	7,956	1,706,400	26,124	1,371,662	18,168
1910	365,752	8,859	1,814,002	28,372	1,448,250	19,513
1911	322,487	8,304	1,288,729	20,896	966,242	12,592
1912	476,504	13,081	1,429,338	23,089	952,834	10,008

5. Preserved Fruit.—Details concerning the quantities and values of preserved fruit imported into and exported from the Commonwealth cannot readily be obtained, owing to the fact that in the Customs returns particulars concerning fruit and vegetables are in certain cases combined. The total value of fruit and vegetables, other than fresh fruits, dried fruits, potatoes, and onions, imported into Australia during 1912 was £57,856, and the corresponding value of exports was £37,825.

§ 16. Minor Crops.

1. Nature and Extent.—In addition to the leading crops which in the foregoing pages have been dealt with in some detail, there are many others which, owing either to their nature or to the fact that their cultivation has advanced but little beyond the experimental stage, do not occupy so prominent a position. Some of the more important of these are those which may be classed under the heads of Market Gardens, Pumpkins and Melons, Turnips, Mangolds, Nurseries, Grass Seed, Tobacco, Hops, and Millet, while the possibilities of cotton-growing in the tropical portions of the Commonwealth have in recent years received considerable attention, although the industry cannot yet be said to have assumed definite shape. The total area in the Commonwealth during the season 1912-13 devoted to minor crops was 72,703 acres, of which market gardens accounted for 30,676 acres.

2. Market Gardens.—Under this head are included all areas on which are grown mixed vegetables for sale. Where considerable areas are devoted to the production of one vegetable, such for instance as the potato, the onion, the melon, the tomato, etc., these crops are usually not included with market gardens, but are shewn either under some specific head, or under some such general head as "Other Root Crops," or "All other Crops." The area under market gardens in the several States of the Commonwealth during 1901-2 and each of the last five seasons is given in the table hereunder:—

COMMONWEALTH MARKET GARDENS, 1901-2 and 1908-9 to 1912-13.

Season.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Federal Terr.	C'wealth.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1901-2 ...	7,834	8,752	2,328	9,005	2,142	1,746	...	...	31,837
1908-9 ...	10,331	9,279	2,875	2,818	3,471	1,603	...	...	30,377
1909-10 ...	10,254	10,214	2,677	2,784	3,481	1,720	...	...	31,130
1910-11 ...	9,813	10,778	2,317	2,818	3,576	1,741	*58	...	31,101
1911-12 ...	9,488	10,331	2,293	2,848	3,120	2,144	58	10	30,292
1912-13 ...	9,836	10,414	2,386	2,857	3,664	1,458	50	11	30,676

* Included with South Australia prior to 1910-11.

In all the States the area for 1908-9 was in excess of that for 1901-2 with the exception of South Australia, where the falling-off is more apparent than real, being in large part due to a change in the classification of crops introduced in connection with the new system of collection which came into force for 1907-8. It is believed that the figures given for the earlier years are considerably in excess of the truth. During the past five seasons there has been very little variation in the total area of market gardens in any of the States; Victoria shews the largest increase, viz., 1135 acres.

3. Grass Seed.—The total area under this crop during 1912-13 was 7347 acres, of which 3028 acres were in Tasmania, 2429 acres in Victoria, 1845 acres in Queensland, and 45 acres in South Australia. The total yield for 1912-13 was 81,617 bushels, or 24.72 bushels per acre.

4. Tobacco.—The tobacco-growing industry is one which has experienced marked fluctuations in Australia and which once promised to occupy an important place amongst the agricultural industries of the Commonwealth. Thus, as early as the season 1888-9 the area under this crop amounted to as much as 6641 acres, of which 4833 were in New South Wales, 1685 in Victoria, and 123 in Queensland. This promise

of prosperity was, however, not fulfilled, and after numerous fluctuations, in the course of which the Victorian area rose in 1895 to over 2000 acres, and that in Queensland to over 1000 acres, the total area under tobacco for the season 1912-13 was only 2745 acres, distributed as follows:—New South Wales, 1914 acres; Victoria, 138 acres; and Queensland, 692 acres. This decline in production appears to have been due to the comparatively small demand which existed in Australia for the locally-produced leaf, and to the fact that the cost of production and preparation in the Commonwealth prevented the Australian leaf from obtaining a footing in the outside markets. Probably under more favourable circumstances, and with greater attention given to the production of leaf of the best quality only, the industry is one which will eventually assume considerable proportions. In all the States in which its cultivation has been tried the soil and climate appear to be very suitable for the growth of the plant, and the enormous importations of tobacco in its various forms into the Commonwealth furnish an indication of the extensive local market which exists for an article grown and prepared in such a manner as to meet with the requirements of consumers. The value of the net importations of tobacco into the Commonwealth during the year 1912 amounted to £914,439, comprising unmanufactured tobacco (£610,420), cigars (£163,898), cigarettes (£50,932), manufactured tobacco (£88,165), and snuff (£1024).

5. Pumpkins and Melons.—The total area under this crop in the Commonwealth during 1912-13 was 13,662 acres, of which 4174 acres were in New South Wales, 2632 acres in Victoria, 6122 acres in Queensland, and 731 acres in Western Australia; the production for the first three named was 14,961, 24,392 and 17,645 tons respectively; the quantity produced in Western Australia is not available.

6. Hops.—Hop-growing in the Commonwealth is practically confined to Tasmania and some of the cooler districts of Victoria, the total area for the season 1912-13 being 1883 acres, of which 1247 acres were in Tasmania, and 131 acres in Victoria; a small area of 5 acres was also grown in South Australia. The Tasmanian area, though still small, has increased rapidly during the past nine years, the total for the seasons 1901-2 being only 599 acres. On the other hand, the Victorian area, which in 1901-2 was 307 acres, has diminished to 131 acres in 1912-13. The cultivation of hops was much more extensive in Victoria some thirty years ago than at present, the area devoted to this crop in 1883-4 being no less than 1758 acres. During the year 1912 the net importations of hops into the Commonwealth represented a weight of 1,077,261 lbs. and a value of £87,022. The total value of the net importations of hops into Australia during the past ten years amounted to £540,764, thus indicating the existence of a regular and extensive local demand.

7. Millet.—Millet appears in the statistical records of three of the Commonwealth States. The total area devoted thereto in 1912-13 was 2693 acres, of which 1828 acres were in New South Wales, 474 in Victoria, and 391 in Queensland. The particulars here given relate to millet grown for grain and fibre. That grown for green forage is dealt with in the section relating thereto.

8. Nurseries.—In all the States somewhat extensive areas are devoted to nurseries for raising plants, trees, etc., but statistics concerning the area so occupied for flowers, fruit trees, etc., are not available, and so far as they relate to forestry are given elsewhere.

9. Cotton.—Cotton-growing on a small scale has been tried in Queensland, but so far without very marked success: 441 acres were devoted to this crop in 1912-13, giving a yield of 150,414 lbs. of seed cotton, valued at £3760. Hopes are entertained that with the invention of a mechanical device for the picking of the cotton the industry will become firmly established, since the soil and conditions appear eminently suitable for the growth of this crop. Small areas in the Northern Territory have also been planted with

cotton, and 15 acres were under cultivation in 1912-13. The tropical portions of Western Australia have also long been regarded as suitable for its cultivation.

10. **Coffee.**—Queensland is the only State of the Commonwealth in which coffee-growing has been at all extensively tried, and here the results have up to the present time been far from satisfactory. The total area devoted to this crop reached its highest point in the season 1901-2, when an area of 547 acres was recorded. Since then the area continuously declined to 1906-7, when it was as low as 256 acres. During the season 1907-8 an improvement occurred and the total reached was 304 acres, succeeded by a fall to 285 acres in 1908-9, 200 acres in 1910-11, 198 acres in 1911-12, and 196 acres in 1912-13. In the last-mentioned season the yield amounted to 131,928 lbs., valued at £4947.

11. **Other Crops.**—Miscellaneous small crops are grown in the several States, amongst which may be mentioned tomatoes, rhubarb, artichokes, arrowroot, chicory, and flowers.

§ 17. Bounties on Agricultural Products.

1. **General.**—The Bounties Act of 1907 passed by the Federal Parliament in order to encourage the manufacture and production of certain articles in the Commonwealth, includes among the number of items on which bonuses are payable, several agricultural products. The most important of these, viz., sugar, has been referred to on page 339 of this publication. Minor products of the soil on which these bounties are payable are as set out in the following table :—

AGRICULTURAL PRODUCTS (OTHER THAN SUGAR) ON WHICH BOUNTIES ARE PAYABLE.

Article.	Period dating from 1st July, 1907, during or in respect of which Bounty may be paid.	Rates of Bounty.	Maximum amounts which may be assigned in any one year.
Cotton, ginned... ..	8 years	10 % on market value	£ 6,000
Fibres—			
New Zealand flax	10 "	10 " "	3,000
Flax and hemp	5 "	10 " "	8,000
Jute	5 "	20 " "	9,000
Sisal hemp	10 "	10 " "	3,000
Oil materials supplied to an oil factory for the manufacture of oil—			
Cottonseed	8 "	10 " "	1,000
Linseed (flax seed)	5 "	10 " "	5,000
Rice, uncleaned	5 "	20s. per ton	1,000
Coffee, raw, as prescribed	8 "	1d. per lb.	1,500
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed	5 "	2d. "	4,000
Fruits—			
Dates (dried)... ..	15 "	1d. "	1,000
Dried (except currants and raisins) or candied, and exported	5 "	10 % on market value	6,000

* Any unexpended amount assigned in any year is available for the years following.

Although the rate of bonus on the several articles, is, as shewn above, fairly liberal, the bounties have not been availed of to any great extent, as will be seen from the following table, which gives particulars as to the quantity of the articles raised and the amounts paid as bounties in respect thereof for the five financial years ended 1912-13 :—

PARTICULARS OF BOUNTIES PAID ON AGRICULTURAL PRODUCTS (OTHER THAN SUGAR), 1908-9 to 1912-13.

Article.	Quantity produced on which Bounties were paid.					Amount paid as Bounties.				
	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Cotton, ginned ...lbs.	21,865	24,994	53,178	60,443	46,043	£ 32	£ 34	£ 91	£ 137	£ 95
Fibres—										
Flax and hemp tons	32	28	28	137	101	126	120	123	480	215
Sisal hemp ... "	14	11	45	8	...	34	25	112	18	...
Oil materials supplied to an oil factory for the manufacture of oil—										
Cottonseed ... lbs.	36,491	45,610	96,312	...	84,479	12	10	22	...	13
Linseed (flax seed) cwt.	36	...	...	...	100	6	...	...	...	9
Coffee, raw, as prescribed lbs.	53,365	28,134	26,825	16,269	30,053	222	117	112	68	125
Tobacco leaf for the manufacture of cigars, high grade, of a quality to be prescribed lbs.	14,538	33,093	10,902	9,258	25,820	121	276	90	78	215
Fruits—										
Dried (except currants and raisins) or candied, & exported lbs.	12,096	23,932	454,075	636,452	168,001	28	104	940	1,734	576

During the year 1912-13 the total amount paid in respect of cotton, cotton seed, and coffee was claimed by the State of Queensland. Victoria collected £327, South Australia £160, and Tasmania £89 of the fruit bonus, while £195 of the bounty paid for tobacco leaf was paid to Queensland, the remaining £9 being earned in New South Wales. Victoria claimed the total amount paid for flax and hemp.

No bounties have yet been paid on New Zealand flax, jute, uncleaned rice or dates.

§ 18. Fertilisers.

1. General.—In the early days of settlement and cultivation in the Commonwealth, scientific cultivation was in a much less developed state than it is to-day. The early farmers were neither under the necessity, nor were they as a rule aware of the need, of supplying the constituents to the soil demanded by each class of crop. The widely-divergent character of the soils in the Commonwealth, their degeneration by repeated cropping, the limitations of climatic conditions, the difficulties of following any desired order of rotation of crops, all rendered it necessary to give attention to artificial manuring. The introduction of the modern seed-drill, acting also as a fertiliser distributor, has greatly facilitated the use of artificial manures, and much land formerly regarded as useless for cultivation has now been made available. There is reason to believe that this feature will be even more strikingly characteristic of the future.

2. Fertilisers Acts.—In order to protect the interests of users of artificial manures legislation has been passed in each of the States, regulating the sale and preventing the adulteration of fertilisers. A list of these Acts and their main features will be found in the previous issue of the Year Book (pages 406 and 407).

3. Imports.—The local production of artificial manures has assumed large proportions during the last few years, though considerable quantities are still imported.

The importation of fertilisers has increased nearly 200 per cent. since 1901. The chief items, both as regards quantity and value, are those relating to phosphates, a fertiliser which has proved itself to be very suitable for the growing of cereals in Australian

soils. The greatest quantity of the manufactured superphosphates imported from any one country during 1912 was obtained from Japan, whence came over 52½ per cent. of the total imported, while the United Kingdom contributed over 36 per cent., Germany 6½ per cent., and the Netherlands 4½ per cent., the balance being imported from Belgium and France. Ocean Island, with 76 per cent., was the principal contributor of rock phosphates; of the balance about 13 per cent. was obtained from Christmas Island, and 11 per cent. from the Caroline Islands. Guano is imported chiefly from Ocean Island, one of the South Sea group, and in lesser quantities from Malden Island and Peru, while the East Indies had practically a monopoly of the bone-dust trade with the Commonwealth during 1912.

The imports of artificial manures during the last five years is shewn in the following table. It will be noticed that the quantity of rock phosphates imported during that period has shewn a steady increase. The imports were particularly large during 1910 and 1912. The figures for the manufactured superphosphates shewed an increase of about 50 per cent. during 1910, those for 1911 shew a further increase of some 5 per cent., while those for 1912 shew a decrease of 23 per cent. as compared with those of the previous year.

COMMONWEALTH IMPORTS OF FERTILISERS, 1908 to 1912.

Fertiliser.			1908.	1909.	1910.	1911.	1912.
Bonedust	Cwt.		74,657	71,959	12,740	4,164	8,769
"	£		18,088	17,632	3,294	1,086	2,309
Guano	Cwt.		696,660	468,215	788,304	484,003	541,873
"	£		84,961	56,723	89,961	52,447	64,833
Superphosphates ...	Cwt.		610,596	757,515	1,196,613	1,254,852	967,460
"	£		94,203	105,229	174,751	183,932	155,643
Rock Phosphates ...	Cwt.		1,267,665	1,006,030	2,112,127	1,721,140	1,963,640
"	£		183,817	143,246	294,212	228,292	259,994
Other	Cwt.		197,240	151,241	377,327	161,121	247,026
"	£		60,676	38,007	107,573	47,479	82,769
Total ... {			2,846,818	2,454,960	4,487,111	3,625,320	3,728,788
	£		441,745	360,837	669,791	513,136	565,548

4. Exports.—The subjoined table shews the exports of artificial manures for the years 1908 to 1912. Practically the whole of the fertiliser is manufactured locally, and is shipped mainly to New Zealand, Japan and the Pacific Islands:—

COMMONWEALTH EXPORTS OF FERTILISERS, 1908 to 1912.

Fertiliser.			1908.	1909.	1910.	1911.	1912.
Bonedust	Cwt.		65,491	62,637	80,602	122,456	125,546
"	£		17,069	16,571	19,066	34,787	38,188
Guano	Cwt.		...	...	2,812	2,719	500
"	£		...	...	490	603	100
Superphosphates ...	Cwt.		250,236	235,939	260,261	200,925	182,377
"	£		47,418	44,041	51,051	38,007	34,400
Rock Phosphates ...	Cwt.		5,077	3,320	11,190	2,106	...
"	£		1,145	658	1,819	353	...
Soda Nitrate	Cwt.		429	3,579	6,215	6,107	5,523
"	£		222	2,075	2,844	3,098	2,660
Ammonia Sulphate ...	Cwt.		70,258	69,894	69,015	56,630	73,193
"	£		45,915	42,766	43,081	37,141	51,022
Other	Cwt.		120,524	177,189	229,841	215,382	146,348
"	£		28,565	33,880	48,969	53,510	49,316
Total ... {			512,015	552,558	659,936	606,325	533,487
£			140,334	139,991	167,340	167,499	175,686

5. **Statistics of Use of Fertilisers.**—The statistics available in connection with the use of manures in the Commonwealth for a series of years refer to New South Wales, Victoria, South Australia, and Western Australia; those for Tasmania were collected for the first time for 1911-12. Particulars concerning the first-mentioned State are given hereunder:—

FERTILISERS USED IN NEW SOUTH WALES, 1908-9 to 1912-13.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1908-9 ...	2,717,085	509,262	18.74	216,078	15,545
1909-10 ...	3,180,561	826,197	25.98	189,008	21,659
1910-11 ...	3,386,017	1,030,554	30.43	186,204	25,017
1911-12 ...	3,628,513	1,407,453	38.80	178,689	33,820
1912-13 ...	3,737,085	1,642,078	43.94	170,312	38,918

Particulars for Victoria for 1901-2 and the past five seasons are as follows:—

FERTILISERS USED IN VICTORIA, 1901-2 and 1908-9 to 1912-13.

Season.	Total Area of Crops.	Farmers Using Manure.	Area Manured.		Manure Used.	
			Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	No.	Acres.	%	Tons.	Tons.
1901-2 ...	2,965,681	11,439	556,777	18.77	153,611	23,535
1908-9 ...	3,461,761	24,437	2,053,987	59.33	235,492	64,715
1909-10 ...	3,658,535	26,690	2,407,331	65.80	197,446	77,579
1910-11 ...	3,952,070	27,845	2,714,854	68.69	203,884	86,316
1911-12 ...	3,640,241	26,159	2,676,408	73.52	205,739	82,581
1912-13 ...	4,079,356	29,524	3,029,418	74.26	222,253	94,010

The figures relating to the use of fertilisers in South Australia are shewn in the table below:—

FERTILISERS USED IN SOUTH AUSTRALIA, 1908-9 to 1912-13.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crop.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1908-9 ...	2,321,812	1,712,394	73.75	120,648	64,842
1909-10 ...	2,530,301	2,031,832	80.30	133,935	76,413
1910-11 ...	2,746,334	2,235,578	81.40	129,918	81,899
1911-12 ...	2,965,338	2,511,130	84.68	134,503	87,475
1912-13 ...	3,062,998	2,603,136	84.99	111,434	91,607

Corresponding particulars relative to Western Australia for the seasons 1908-9 to 1912-13 are given in the following table, and furnish interesting evidence of the rapid extension of the use of manures in that State:—

FERTILISERS USED IN WESTERN AUSTRALIA, 1908-9 to 1912-13.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stable-yard, etc.).	Artificial.
	Acres.	Acres.	%	Loads.	Tons.
1908-9 ...	585,339	493,545	84.32	61,834	21,358
1909-10...	722,086	608,870	84.32	67,263	24,654
1910-11...	855,024	773,561	90.47	62,229	33,194
1911-12...	1,072,653	992,463	92.52	51,600	43,843
1912-13...	1,199,991	1,120,334	93.36	55,085	47,563

Statistics relating to the use of manures in Tasmania were collected for the first time in 1911-12, particulars for the past two seasons are as follows:—

FERTILISERS USED IN TASMANIA, 1911-12 and 1912-13.

Season.	Total Area of Crops.	Area Manured.		Manure Used.	
		Aggregate.	Percentage to Total Area of Crops.	Natural (Stableyard, etc.).	Artificial.
	Acres.	Acres.	%	Tons.	Tons.
1911-12...	270,000	129,914	48.12	25,792	8,750
1912-13...	286,065	137,653	48.12	27,328	9,272

A marked increase in the proportion of cropped land treated with manure is in evidence in all of the States for which returns are available. Thus, in New South Wales the area of manured land represented in 1908-9 only 18½ per cent. of the area under crop, as against nearly 44 per cent. in 1912-13. Similarly, in Victoria the percentage increased from 18½ per cent. in 1901-2 to 59½ per cent. in 1908-9 and to 74½ per cent. in 1912-13, in South Australia from 73½ per cent. in 1908-9 to over 85 per cent. in 1912-13, and in Western Australia from 64 per cent. in 1904-5 to 93½ per cent. in 1912-13.

6. Local Production of Fertilisers.—Statistics relative to the local production of fertilisers are very incomplete, and detailed returns for fertiliser factories other than bone mills are not available. The number of firms engaged in the manufacture of artificial manures in the Commonwealth at latest available date was 87, made up as follows:—New South Wales, 14; Victoria, 32; Queensland, 13; South Australia, 20; Western Australia, 6; and Tasmania, 2. If, however, approximately complete returns of the quantities of fertilisers used in the various States could be given, a comparison with the importations would give valuable information, but, as already mentioned, such particulars are only available for four of the States prior to 1911-12, and even then do not furnish the whole of the information necessary.

7. Benefits Derived from the Use of Fertilisers.—There is little doubt that the increased and increasing use throughout the Commonwealth of fertilisers, natural and artificial, combined with the greater attention being devoted to fallowing and to the combination of sheep-farming with agriculture, is having the effect of improving the

prospects of those dependent for a livelihood on the products of the soil. Reference has previously been made to the loss to the soil of phosphoric acid which the Commonwealth export of wheat and its milled products involves, and the necessity which thus arises for returning this ingredient in some form. Similarly, other staple products exported impose their respective tolls upon the soil of the Commonwealth, and the increased use of fertilisers furnishes evidence that producers are alive to the necessity for making good the deficiency so arising.

§ 19. Ensilage.

1. Value to Stockowners.—The use of ensilage as a substitute for green fodder during periods of drought or spells of dry weather, or for winter use, is less extensive in Australia than the circumstances would appear to warrant. There is, however, a growing disposition on the part of dairy farmers to make silos on their holdings, as they find that dairy cattle eat ensilage greedily, and that by its means the output of milk, both in regard to quantity and quality, may be kept up long after the supply of ordinary green food is exhausted. Sheepbreeders are also recognising the fact that during protracted periods of dry weather the silo enables them to keep their stock in good condition, and that lambing can take place satisfactorily. Ensilage thus obviates the expense of travelling or trucking sheep for hundreds of miles to get beyond the drought area, or the equally costly and even ruinous alternative of providing chaff for food at high prices and costly freight. In the rearing of lambs for the London market, ensilage appears to be destined to play an important part, as the lambs thrive upon it much better than upon dry food. By the judicious economising of the surplus growth of green food with the use of the silo, farmers and squatters can carry more stock on their holdings than they otherwise would be justified in doing. Not only is the great waste of superabundant food thus avoided, but it becomes possible to change into a succulent and nutritious food much growth that in any other state would not be eaten by stock. Thus such vegetation as marsh mallows, thistles, weeds of all sorts, and even the swamp reed *Arundo phragmites*, which grows in great quantities in lagoons, billabongs, and swamps, are all eaten with avidity when offered to stock in the form of ensilage. The pit and stack silos are rapidly being superseded by those built of red gum and hardwood or concrete. This is found to a great extent to obviate the loss sustained by mould, at the same time reducing the risk of fire. The silos vary in capacity from forty to 130 tons. A portable silo made of iron, which has been devised, is made in sections of such size and weight as to admit of ready handling. These silos can be increased in diameter or height by the addition of further sections.

2. Government Assistance in the Production of Ensilage.—The Government of Victoria, recognising the fact that defective methods of making ensilage have often been adopted, leading to partial or total failure, have for some years been making special efforts to educate the farming community in this respect, so that mistakes may be avoided and the conditions essential for the production of good ensilage may be better appreciated. These conditions vary with the climate and with the locality. The Government also undertakes the erection of silos on very liberal terms, repayment extending over a series of years. Experts supervise the erection of the silos, and give practical lessons as to packing them, etc. The New South Wales Government have, by giving advice in the "Agricultural Gazette" and by the issue of special bulletins, taken steps towards the education of the farmers. Silos have also been erected on the various experimental farms with a view to demonstrating the value of ensilage. No financial assistance is, however, given in New South Wales in this connection.

3. Quantity Made.—Particulars concerning the number of silos and the quantity of ensilage made in the several States of the Commonwealth in the seasons 1908-9 to 1912-13 are furnished in the table given hereunder:—

COMMONWEALTH ENSILAGE-MAKING, 1908-9 to 1912-13.

State or Territory.	1908-9.		1909-10.		1910-11.		1911-12.		1912-13.	
	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.	*Holdings.	Ensilage Made.
New South Wales ...	No. 300	Tons. 27,468	No. 364	Tons. 34,847	No. 258	Tons. 29,616	No. 158	Tons. 20,477	No. 144	Tons. 18,509
Victoria ...	392	18,205	518	27,280	460	25,969	371	20,888	287	17,877
Queensland ...	59	4,634	79	4,517	97	5,804	61	4,379	56	4,156
South Australia ...	67	2,017	81	2,244	68	1,530	39	1,250	28	2,200
Western Australia ...	51	1,171	28	770	14	414	9	307	23	479
Tasmania ...	11	512	13	686	21	1,073	34	280	20	424
Federal Territory ...	...	...	...	...	...	...	...	...	1	10
Commonwealth ...	880	54,027	1,083	70,344	918	64,406	672	47,581	561	43,655

* No. of holdings on which ensilage was made.

Since the drought of 1902-3 greater attention has been paid to ensilage than was previously the case, and during the four seasons ended 1909-10 a continuous and fairly rapid increase was in evidence in all the States, both in the number of holdings on which ensilage was made, and in the quantity produced. The seasons for 1911-12 and 1912-13 shew a falling-off in all the States. The reduction cannot be accepted as an indication of a lessening of appreciation of the benefits of ensilage, but rather of the fact that stocks had not been drawn upon to any great extent during the previous seasons.

§ 20. Agricultural Colleges and Experimental Farms.

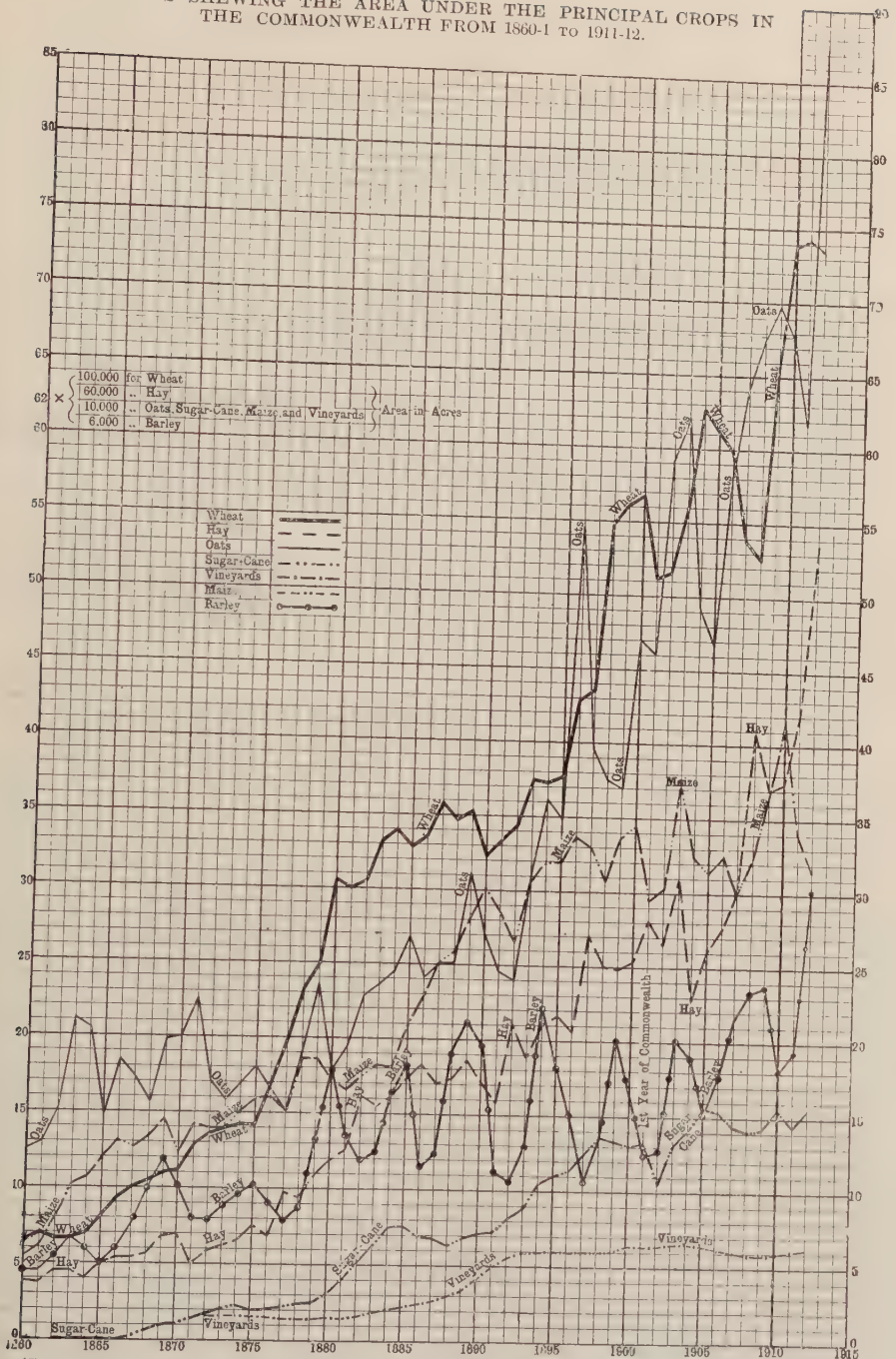
1. **Introduction.**—It has been thought preferable to refer to what may be called the effort in the direction of agricultural education in this section rather than under the heading of education.

In most of the States agricultural colleges and experimental farms have been established with a view to promoting agriculture and to establishing improved and more scientific systems of stock-breeding and dairying. In these colleges and on some of the farms provision is made for the accommodation of pupils, to whom both practical and theoretical instruction is given by experts in various branches of agriculture. Analyses of soils and fertilisers are made, manures are tested, and elementary veterinary science, etc., is taught, while general experimental work is carried on with cereal and other crops, not merely for the purpose of shewing that it is practicable to produce certain crops in a given place, but also to shew how it is possible to make farming pay best in that locality. Opportunities are afforded for practice in general agricultural work, and instruction is given in the conservation of fodder, in cheese and butter making; in the management, breeding, and preparation for the market of live stock; in the eradication of pests and weeds; and in carpenters', blacksmiths', and other trades.

Travelling expert lecturers are sent to the various agricultural and dairying centres, and there is a wide distribution of periodical agricultural gazettes and bulletins on matters of importance at special seasons.

2. **Particulars of Agricultural Colleges and Experimental Farms.**—In the tables given below particulars of agricultural colleges and experimental farms in the several States of the Commonwealth in 1912-13 are shewn. Tasmania is the only State in which such colleges or farms are not established.

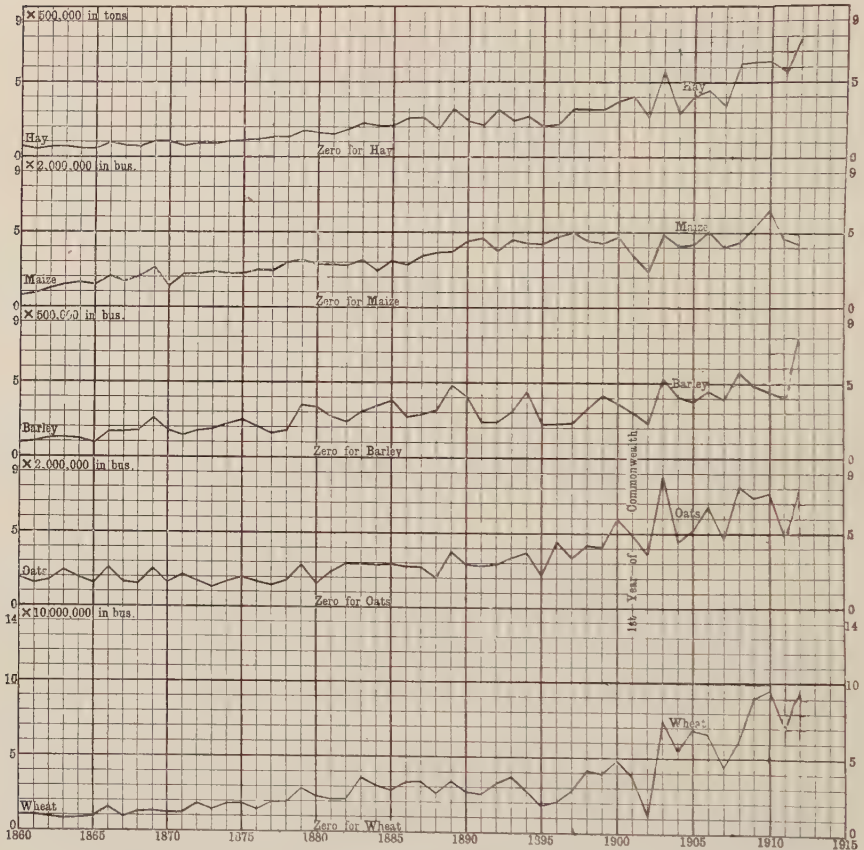
GRAPHS SHEWING THE AREA UNDER THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1911-12.



(See pages—for wheat, 310; oats, 318; maize, 321; barley, 324; hay, 332; sugar-cane, 337; and vineyards, 341.)

EXPLANATION OF GRAPHS.—The base of each small square represents an interval of one year while the vertical height represents a number of acres, varying with the nature of the crop in accordance with the scale given on the left-hand of the diagram. The height of each graph above the base line denotes, for the crop to which it relates, the total area under cultivation in the Commonwealth during the successive seasons.

GRAPHS SHEWING THE PRODUCTION OF THE PRINCIPAL CROPS IN THE COMMONWEALTH FROM 1860-1 TO 1911-12.



(See pages—for wheat, 311; oats, 318; maize, 322; barley, 325; and hay 333.)

EXPLANATION OF GRAPHS.—In this diagram a separate base line is provided for each of the crops dealt with. In each instance the base of a small square represents an interval of one year the vertical height of such square representing in the case of the wheat graph, 10,000,000 bushels; oats, 2,000,000 bushels; barley, 500,000 bushels; maize, 2,000,000 bushels; and hay, 500,000 tons. The height of each graph above its base line denotes the aggregate yield in the Commonwealth of that particular crop during the successive seasons.

PARTICULARS OF AGRICULTURAL COLLEGES AND EXPERIMENTAL FARMS IN THE SEVERAL STATES OF THE COMMONWEALTH DURING THE SEASON 1912-13.

Particulars.	Unit of Quantity.	New South Wales.	Vic.	Q'land.	South Aust.	West. Aust.	Tasmania. (a)	Northern Terr.	C'wlth.
No. of agricultural colleges	No.	1	2	1	1				5
" experimental farms ...	"	16	5	5	8	4		2	40
" students ...	"	401	203	47	54	4			709
" hands employed ...	"	157	150	58	57	20		33	475
Value of plant & machinery	£	16,560	10,555	5,800	8,647	2,559		8,000	52,121
" produce for year ...	"	22,569	12,586	4,067	9,903	3,610			52,736
Receipts—									
Government grant ...	"	15,397	12,040		15,222				42,659
Fees ...	"	4,552	3,305	1,049	1,923	95		50	10,974
Sales of produce, &c. ...	"	3,598	5,868	3,788	4,505	3,054			20,813
Other ...	"	239	704		2,107	683			3,733
Total receipts ...	"	23,786	21,917	4,837	23,757	3,832		50	78,179
Expenditure—									
Salaries, professional ...	"	4,341	5,134	3,295	2,740			700	16,210
" general ...	"	6,036	8,679	5,042	6,774	3,219		4,000	34,650
Buildings & maintenance	"	1,528	22,090	11,202	8,458	3,607		2,500	73,427
Other ...	"	10,981			5,785	276		7,000	
Total expenditure ...	"	23,786	35,903	19,539	23,757	7,102		14,200	124,287
Agriculture, &c.—									
Area under cereals for grain	Acre	1,066	1,087	195	2,584	1,085		18	6,035
" hay ...	"	1,171	629	311	986	255		17	3,369
" fruit trees, &c. ...	"	259	90	37	25	41			452
" vines ...	"	122	81	9	53	2			266
" green fodder ...	"	1,317	394	158	242	369		74	2,554
" root crops ...	"	78	30	41	5	1		5	160
" other crops ...	"	62	67	31	107	95		20	382
Total under crop ...	"	4,075	2,378	782	4,001	1,848		134	13,218
Area of land in fallow ...	"	347	991	69	2,584	1,100		45	5,136
" under artificially sown grasses	"	581	32	107	10	50			780
New ground broken up during season ...	"	260	100	84	510	350		147	1,461
Previously cropped land lying idle ...	"	824	1,778	190	1,223	718			4,733
Total area of arable land	"	6,087	5,279	1,232	8,328	4,066		326	25,318
Balance of area ...	"	20,242	5,718	13,794	7,960	3,490		4,794	55,998
Total of area ...	"	26,329	10,997	15,026	16,288	7,556		5,120	81,316
Live stock—									
Horses ...	No.	440	210	176	225	72		49	1,172
Dairy cows ...	"	520	186	114	212	98		11	1,141
All other cattle ...	"	489	221	616	54	77		10	1,467
Sheep ...	"	5,360	2,900	1,009	2,702	751		42	12,764
Pigs ...	"	711	239	242	296	80		26	1,594
Capacity of tanks or dams ...	Gal.	87,130	8,750,000	233,870	2,160,800	15,000		8,000	11,254,800

(a) There are no Agricultural Colleges or Experimental Farms in Tasmania.

3. **New South Wales.**—In order to meet the demand for agricultural training, and for the purpose of conducting experiments in various branches of agriculture and of disseminating agricultural knowledge, an agricultural college and farm and sixteen experimental farms are now established by the New South Wales Government. Theoretical instruction in agriculture, with practical illustrations, forms part of the curriculum of the Sydney Technical College. The School of Agriculture in the Sydney

University, which has been established for three years, is doing very satisfactory work. At the Hurlstone Continuation College there is a special course in both theoretical and practical agriculture for teachers. Instruction in "nature knowledge" is given in the State primary schools, many of which have their own experimental plots. As a means of further encouraging the study of agriculture the Department of Public Instruction has a travelling inspector in agriculture, whose duty it is to visit the country and metropolitan schools, lecturing on the value, necessity, and advantages of agricultural knowledge, and giving practical demonstrations wherever practicable.

4. Victoria.—In 1884, the Agricultural Colleges Act, passed to make provision for the establishment of agricultural colleges and experimental farms in Victoria, provided for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of agricultural colleges and experimental farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are vested in three trustees appointed by the Governor. Provision was made for the appointment of a Council of Agricultural Education, consisting of eleven members, five of whom are elected by the members of the Agricultural Societies of the State, five are nominated by the Governor, whilst the Secretary for Agriculture is also a member of the Council and its Treasurer. Two agricultural colleges and five experimental farms, orchards and vineyards were in existence in different parts of the State during 1912-13. There are five Agricultural High Schools under the control of the Education Department, while elementary experimental agriculture is taught at many of the State primary schools. Instruction in agriculture is also given at the technical schools at Melbourne and Bairnsdale.

5. Queensland.—Organised experimental agriculture in Queensland dates from the establishment of the Department of Agriculture and Stock, but such work as has been done in connection with stock-breeding, other than that carried on by private individuals, has been of later birth, and has been confined to dairy stock and draught horses. Agriculture in Queensland in the early nineties was upon the well-defined lines of the other States, so that the knowledge to be gained as to what could be profitably adapted to Queensland, with its varied climate and rainfall, covered a wide field. Instructors were appointed conversant with the different lines of agriculture, of which grain cultivation, dairying, fruit-growing, tobacco cultivation, and tropical agriculture, such as sugar, rubber, and spices, are the most important. This has been followed by the establishment of an agricultural college, of farms in the temperate parts of the State, and of nurseries in the tropical parts. With wheaten grain a system of experiments has been carried out for some years with the distinctive object of evolving a type of wheat adapted for Queensland, and as far as possible resistant to the attacks of rust. In dairying, a commencement was made by despatching to the different farming centres properly equipped travelling dairies with the latest appliances. The export of Queensland dairy produce has arisen through this effort. No travelling dairies are, however, now employed. A fruit farm has been established, at which fruits suitable for or likely to adapt themselves to the Queensland climate and conditions have been experimented with during a series of years. To cope with the insect and fungus pests to which such fruits are peculiarly susceptible, careful inspection is made of fruits in the markets and for export, and every effort is put forth to prevent the introduction of fresh diseases and to exterminate those which are already within the State.

6. South Australia.—To this State belongs the honour of starting the first experimental farm in the Commonwealth. As far back as the year 1879 a resolution was passed by the local Parliament in favour of the establishment of a School of Agriculture, with an experimental farm, under the charge of a professor of agriculture. Active operations in this connection were commenced in 1882, when the first series of plots of wheat were sown at Roseworthy. Experimental work, chiefly directed towards improving

the wheat yield, has been developed along three main lines, viz.: (a) the improvement of varieties of wheat, (b) the improvement of methods of cultivation, and (c) the use of manures. The Central Agricultural Bureau, established at Adelaide under the control of an Advisory Board, has an extensive membership distributed throughout the agricultural districts of the State. It assists farmers by the dissemination of knowledge; by helping to introduce new economic plants; by improving the breed of stock; and it acts as a means of keeping the Agricultural Department in touch with the producers. The branches of the bureau hold meetings at regular intervals in their several districts, ideas and methods as regards practical subjects are interchanged, and discussions are held on matters of general interest to agriculturists.

7. **Western Australia.**—A considerable amount of developmental work has been done of late years towards the promulgation of agricultural knowledge on the State farms at Chapman and Narrogin, and, more recently still, on the experimental farms at Brunswick and Nangeenan.

8. **Tasmania.**—In Tasmania there is a Council of Agriculture consisting of eleven members, whose duties are to collect and publish information of every kind calculated to prove beneficial to agriculturists, such as suitability of various districts for growth or production of animal and vegetable products, information respecting plants, methods of cultivation, breeding and feeding animals, and how best to improve the same: to prevent as far as possible the introduction and spread of diseases and pests, and to publish bulletins, abstracts, and reports containing all such information as may be desirable. Other matters embrace the employment of experts in any branch of agricultural science, distribution of plants and seeds for experiment, and the establishment of local boards of agriculture in different parts of the State. Lectures are given by the experts from time to time, and useful information and knowledge is diffused by means of the monthly gazette published by the Council, and also by means of special bulletins. There are no agricultural colleges or experimental farms, and practically no agricultural teaching is given in the elementary schools.

§ 21. Government Loans to Farmers.

1. **Introduction.**—All the Australian States have established systems under which financial aid is rendered to agriculturists by the Government. The principle upon which such aid is founded was probably first practically applied in Germany, viz., in the year 1770, when the *Landschaften Bank* was created. The establishment of the *Crédit Foncier* nearly a century later in France was a creation of a similar character. This latter institution was designed to enable house and land owners to raise money on mortgage at a low rate of interest, with facility for repayment by an annuity including redemption of the capital. It dates from 1852, but the mortgage bank known as the *Caisse Hypothécaire*, which, after a struggling existence, was finally liquidated in 1846, was based essentially on the same principle. Over the operations of the *Crédit Foncier*, created under governmental patronage and invested with such special privileges as to virtually constitute it a monopoly, the Government exercised a direct control, viz., by appointing its governor and its two deputy-governors. The *Crédit Foncier* was empowered to lend money only on a first mortgage, and to the amount of one-half of the estimated value of houses and farms, and one-third that of vineyards, woods, and other plantations, and the commission charged could not exceed six-tenths per cent. The system developed and adopted in the Commonwealth, with the object of assisting farmers to make improvements or to develop or utilise the agricultural or pastoral resources of the land, is analogous. Particulars of advances made under the Closer Settlement and similar Acts are dealt with in the section on Closer Settlement. (See page 243.)

2. **Aggregate of Transactions in each State, 1909 to 1913.**—The subjoined table gives aggregate of transactions in reference to advances to farmers in each State during the past five years.

STATE GOVERNMENT ADVANCES DEPARTMENTS.—AGGREGATE OF LOANS TO FARMERS, 1909 to 1913 (a).

State.	TOTAL ADVANCED TO DATE.					BALANCE DUE.				
	1909.	1910.	1911.	1912.	1913.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£	£	£	£	£
N.S.W. (b)...	1,062,625	1,362,853	1,617,192	1,945,885	2,423,955	591,292c	795,113c	925,086	1,074,358	1,396,336
Victoria ...	2,492,698	2,657,713	2,797,323	2,954,618	3,208,903	1,293,494c	1,306,425c	1,306,657	1,343,831	1,511,798
Q'nsland ...	187,014	235,793	306,944	430,403	623,498	136,946	163,640	206,997	305,652	470,795
S. Aust.(d)	1,386,153	1,544,946	1,786,762	2,064,583	2,370,076	668,535	710,316	819,818	966,670	1,150,020
W. Aust ...	1,004,675	1,257,082	1,540,241	1,946,184	2,582,937	835,239	935,960	976,511	1,280,732	1,883,957
Tasmania	5,687	9,187	14,610	18,636	23,915	5,657	8,521	13,561	16,592	21,069
C'wealth ...	6,138,852	7,067,574	8,063,072	9,363,309	11,233,284	3,531,073	3,921,975	4,251,930	4,987,838	6,433,995
	ANNUAL PROFITS.					ACCUMULATED PROFITS.				
	£	£	£	£	£	£	£	£	£	£
N.S.W.(b)...	4,661	5,390	8,200	9,543	10,335	6,583	8,039	15,606	25,349	35,684
Victoria ...	7,037	5,926	3,022	3,069	5,203	75,987	81,913	84,936e	88,006e	93,209e
Q'nsland ...	1,405	1,974	2,548	3,318	3,354	4,028	6,003	8,551	11,869	15,223
S. Aust.(d)	4,218	4,587	6,662	6,289	8,218	33,598	38,186	44,848	51,137	59,355
W. Aust ...	6,061	6,823	6,753	8,060	...	24,255	31,078	37,881	45,892	...
Tasmania	...	(—) 98	48	81	472	...	(—) 98	(—) 50	31	503
C'wealth ...	23,382	24,602	27,233	30,360	27,582g	144,451	165,121	191,722	222,284	203,974 g

(a) Compiled from figures furnished by the Government Savings Bank of Victoria. (b) For years ended 31st December prior. (c) Balance after deduction of special principal payments in advances. (d) Includes loans to farmers and other producers and to local bodies on the security of their own rates. (e) Including profits in connection with House and Shop loans. (f) Not available. (g) Exclusive of Western Australia.

3. **Particulars of Transactions in each State.**—An account of the initial legislation in each State in reference to advances to settlers, subsequent legislation, security on which, and objects for which, advances were made, amount of advances and repayments up to the end of 1911-12, etc., will be found in previous issues of the Year Book (see No. 6, pages 417-25).

4. **Transactions in each State, 1912-13.**—The following tables gives particulars of applications received and granted, and amounts advanced and repaid during 1912-13:—

PARTICULARS OF TRANSACTIONS OF STATE GOVERNMENT ADVANCES TO FARMERS DURING THE YEAR 1912-13.

Particulars.		New South Wales.	Victoria.	Queensland.	South Australia.		Western Australia.	Tasmania. (a)
					State Bank (a).	Settlers' Board (b).		
Applications received ...	No.	2,641	1,032	(c)	409	583	3,836	128
" granted ...	£	1,637,261	736,671	(c)	384,066	149,336	800,000	12,694
" granted ...	No.	1,929	466	(c)	112	394	3,442	96
" granted ...	£	1,143,637	291,470	268,560	97,955	122,109	493,872	7,219
Amounts advanced ...	£	771,272	254,285	193,078	95,205	106,519	636,753	5,279
" repaid ...	£	119,756	86,320	27,935	38,063	1,185	33,528	643

(a) Year ended 31st March, 1913.

(b) Year ended 30th June, 1913.

(c) Not available.

(i.) *New South Wales Closer Settlement Promotion Act 1910.* In 1910 an Act was passed in New South Wales whereby intending settlers might acquire by direct purchase from the owner, areas of private land suitable for closer settlement, under the same

conditions, regarding residence, the payment of purchase money etc. as apply to settlement purchases under the Closer Settlement Acts. The purchasers are financed to the extent of 95 per cent. of the purchase money, provided that such does not exceed the bank's valuation of the properties. It is anticipated that a considerable amount of business will be done under this Act which will materially expand the operations of advances to farmers in this State. The following table will shew the business transacted up to the end of 1912 :—

**TRANSACTIONS UNDER THE CLOSER SETTLEMENT PROMOTION ACT
IN NEW SOUTH WALES.**

Applications.	Estates.	Farms	Prices agreed upon by Vendors and Purchasers.
			£
Cases settled and surrender arranged since inception of Act	46	341	742,370
„ reported on but not yet settled	36	256	585,682
„ awaiting inspection and report	27	125	267,655
„ inspection not yet authorised	17	70	144,369
„ refused since inception of Act	41	150	213,958
Total cases submitted up to end of 1912	167	942	1,954,034

The number of estates submitted during the year to bank by the Lands Department was 108, comprising 538 farms, the purchase price asked being £1,168,427.

(ii.) *Particulars of Transactions of Agricultural Bank of Western Australia, 1908 to 1912.* The following table gives particulars of transactions of the Agricultural Bank for each year from 1908 to 1912 inclusive :—

**TRANSACTIONS OF AGRICULTURAL BANK, WESTERN AUSTRALIA, 1908 to 1912.
AMOUNTS ADVANCED FOR WHICH IMPROVEMENTS HAVE BEEN EFFECTED.**

Year ended the 30th June.	Amounts Advanced to Date.	Improvements Effected to Date.							
		Clearing.	Cultivating.	Ring-barking.	Fencing.	Drain-ing.	Wells and Reser-voirs.	Build-ings.	Total.
	£	£	£	£	£	£	£	£	£
1908	743,599	643,341	120,688*	44,363	98,663	4,127	34,789	82,325	1,028,296
1909	1,004,675	780,907	124,338*	62,711	177,410	4,675	48,543	83,708	1,282,292
1910	1,257,082	899,712†	124,782*	81,042	240,729	5,043	61,387	83,868	1,496,563
1911	1,540,241	1,031,891†	124,812*	107,676	297,077	5,386	78,581	83,868	1,729,291
1912	1,946,184	1,194,750†	124,782*	149,043	361,637	5,660	103,519	83,868	2,023,259

* Including £4321 for orchards.

† Including £6300 in 1910, £8611 in 1911, and £12,180 in 1912 for poison and blackboy grubbing.

5. Particulars Respecting Agricultural and Stock Departments.—On pages 364 to 369 will be found particulars respecting agricultural and stock departments of the several States of the Commonwealth as on 30th June, 1913. The main features of organisations are set out under their respective headings, and will be found to embrace such items as the number on staffs, expenditure, facilities for agricultural education and work undertaken in agricultural colleges, technical schools and experimental farms, orchards and vineyards. The nature of lectures given by experts, and other forms of agricultural instruction, the extent of distribution of plants, and the special steps taken by departments for distribution of information amongst agriculturists, and with a view to improving the markets for the products of the States, are also given.

PARTICULARS RESPECTING AGRICULTURAL AND STOCK DEPARTMENTS

MAIN FEATURES OF ORGANISATIONS.	NEW SOUTH WALES.				VICTORIA.				QUEENSLAND.
I. <i>Designation of Minister by whom Dep't. is controlled.</i>	Minister for Lands and Agriculture.				Minister of Agriculture.				The Secretary for Agriculture.
II. <i>Staff on 30th June, 1913—</i>	Agri- culture.	Forestry.	Stock and Brands.	Botanic Gardens, etc.	Head Office.	Agri- culture.	Stock and Dairy.	Exports.	Agricultural and Stock Department.
Administrative	3	1	1	1	1	1	1	1	1
Professional ...	90	2	5	5	...	21	7	4	166
Clerical ...	55	18	14	3	23	...	12	1	46
Temporary ...	244	58	175	35	2	15	52	32	...
General ...	13	46	10	103	6	13	11	27	123
Total ...	405	125	205	147	32	50	83	65	336
III. <i>Expenditure 1912-13</i>	£273,916				£154,858.				£100,857.
IV. <i>Facilities for Agricultural Education—</i>	Hawkesbury. Hurlstone Continuation School (Dep't. of Public Instruction).				Dookie. Longerenong.				Gatton.
(i.) <i>Agricultural Colleges.</i>									
(ii.) <i>Technical Schools at which Agriculture is taught.</i>	Farm Schools at Wagga and Bathurst. Apprentice Schools at Cowra, Glen Innes, Wollongbar, Grafton and Yanco.				Working Men's College, Melbourne. Gordon College, Geelong.				At present agriculture is not taught in any of the Technical Colleges, but at various Colleges classes are conducted in milk and cream testing, veterinary science, wool classing and sorting, sheep and wool training and sugar chemistry.
(iii.) <i>Experimental Farms, Orchards and Vineyards.</i>	Hawkesbury Agricultural College. Experimental Farms at Wagga Wagga, Bathurst, Wollongbar, Glen Innes, Cowra, Grafton, Coonamble, Berry, Yanco, Pera Bore, Demonstration Farms at Nyn-gan, Temora, Condobolin and Dural. Viticultural Stations at Howlong and Raymond Terrace.				Dookie and Longerenong Agricultural Colleges, Werri-bee Central Research Farm, Rutherglen Viticultural Station, W y u n a Irrigation Farm, Burnley Horticultural Gardens, Bamawm Experimental Farm.				State Farms Warwick, Emerald, Rockhampton, Roma, Atherton. State Nursery Cairns and Sugar Experiment Station, Mackay.
<i>Nature and extent of—</i>									
(i.) <i>Agricultural Teaching given in Primary Schools.</i>	Elementary principles of agriculture taught in most of the schools. Experimental plots in many schools. A travelling instructor in agriculture gives lessons and lectures.				Elementary agriculture is taught in a large number of rural elementary schools, and the numbers are steadily increasing. The subject is taken in 700 schools, as against 600 at the beginning of the year. The work is largely experimental, and deals with the properties of soils, the growing of common crops and the principles of manuring.				Since the beginning of 1910 the teaching of agriculture has found a place in a large number of Primary schools, especially in agricultural centres. It is placed amongst the science subjects to be taught, and is to some extent optional. The branches dealt with are (a) tree-planting, (b) flower and vegetable gardening, (c) farm work, including experimental work with maize, wheat, potatoes, bananas, pineapples, hay and fodder crops, grasses, manuring, watering and the conservation of soil moisture; orchard work—pruning, budding, grafting, etc., and dairy work—fodders and feeding, milk and cream testing.

OF THE SEVERAL STATES OF THE COMMONWEALTH.

SOUTH AUSTRALIA.			WESTERN AUSTRALIA.			TASMANIA.	
Minister of Agriculture and Irrigation.			Minister for Agriculture and Industries.			Minister of Agriculture.	
Agricultural Branch.	Stock and Brands.	Produce Department.	Agricultural.	Stock and Brands.	Miscellaneous.	Agricultural Branch.	Stock and Brands Branch.
2	2	3	1	...	...	1	...
8	11	...	9	4	...	7	...
17	5	26	36	2	...	5	...
67	6	90	21	2	...	2	...
34	...	60	43	6	...	1	7
128	24	179	110	14	174	16	7
£125,019.			£87,122.			£9472.	
Roseworthy			Nil.			Nil (One at present under construction.)	
Adelaide School of Mines.			Perth Technical School, Perth Modern School, Kalgoorlie School of Mines, University of Western Australia.			Nil.	
Farms—Roseworthy, Kybybolite, Turretfield, Booboorowie, Veitch's Well. Poultry Station—Parafield. Vineyard—Roseworthy. Orchards—Adelaide and Coromandel Valley. Experimental plots at 16 centres.			Nangeenan, Narrogin, Chapman, Brunswick and Denmark.			State Farm at Deloraine, and experimental plots in privately-owned orchards under supervision of the Fruit Expert.	
No systematic agricultural teaching in primary schools. Experimental elementary agriculture taken up by individual teachers—result satisfactory. Work optional, but not widespread.			The teaching of systematic agriculture is not undertaken in Primary schools. Nature study is general, and in many cases includes much that may be termed elementary agriculture. The life histories of various kinds of plants and the principles of cultivation are studied in the school gardens or in experimental plots. Many simple experiments are carried on in connection with cereals and to a less extent with fodder plants and vegetables. An officer is employed specially for the organisation of such work, and his advice can always be had by teachers. Many suggestions are given through the monthly "Circular" which the Department sends to all teachers.			Most schools have flower and vegetable plots, but the subject of agriculture is taught with little system and only to a very moderate extent.	

PARTICULARS RESPECTING AGRICULTURAL AND STOCK DEPARTMENTS

MAIN FEATURES OF ORGANISATION.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
(ii.) Agricultural Teaching given in Technical Schools.	Instruction in agricultural principles, climate and rainfall, clearing, building, etc.; draining, irrigation, crops, and manures, dairying, sheep and wool, and wool classing, orcharding, pig and poultry breeding, etc.	Agricultural chemistry, woolclassing and Poultry breeding.	Botany, agriculture, sugar, chemistry, scientific baking and milling, dairying, milk and cream testing, plant pathology and economic entomology, horticulture, veterinary science, wool classing and sorting, swine husbandry, poultry farming.
(iii.) Work undertaken in Agricultural Colleges.	Instruction of students, complete course three years, in practical and theoretical agriculture, chemistry, botany, entomology, veterinary science, dairying, sheep and wool, woolclassing, orcharding, pig and poultry breeding, etc. During the college vacation in June a short course is held for farmers.	Complete course in practical and theoretical agriculture extending over three years.	Practical and theoretical agriculture, pre-eminence being given to the former. The curriculum includes botany, elementary science and physics, dairying, gardening, elementary chemistry, veterinary science, horticulture, stock breeding, bacteriology and agricultural chemistry.
(iv.) Work undertaken on Experimental Farms, Orchards and Vineyards.	Instruction of students—the full course is two years—in practical and theoretical agriculture, similar to but less theoretical than at the Hawkesbury College. Producing and harvesting crops, carrying out experiments in methods of cultivation, manuring, etc. Irrigation at Yanco.	Experiments in methods of cultivation, manuring, stock breeding, improving cereals by selection and cross fertilisation, testing of fodder plants.	Experimental and acclimatisation work, stock breeding, hybridisation, object lessons in cultivation, orchard work, etc. Pupils are taken at some of the farms.
(v.) Instruction given by Travelling Diaries, etc.	Nil.	None now employed. Demonstrations in cheese making given by experts, also practical instruction in fruit preserving, drying, etc., flax manufacture, poultry dressing, etc.	Nil.
(vi.) Lectures given by experts.	Agricultural, dairy, fruit, sheep and wool, viticultural and other experts and inspectors visit the different districts under the auspices of the Agricultural Bureau and Societies and give lectures. They also give practical demonstrations in the field. The Veterinary Surgeons of the Department also give lectures and demonstrations.	Agricultural classes, free lectures and practical demonstrations given by departmental experts throughout the State under the auspices of local agricultural and other associations.	Lectures, illustrated by lantern slides, are given by the Departmental Technical Instructors on all agricultural, horticultural and pastoral subjects. The Local Agricultural, Horticultural, or Pastoral Society provides the hall, attends to advertising, etc. These lectures are free to all.
(vii.) Other forms of Agricultural Instruction.	The publication of the Agricultural Gazette monthly, which is issued free to farmers. Reprints of special articles in the Gazette are issued as pamphlets. Bulletins on special branches of agriculture, dairying, fruit growing, and stock, etc., are also issued.	Issue of monthly "Journal of Agriculture" and Bulletins.	Monthly issue of Agricultural Journal and pamphlets on given subjects. Practical demonstrations in the field by the technical instructors on the erection of silos, stacks, pruning, budding and cultivating, correct methods of inoculating cattle, applying insecticides and fungicides, the use of explosives in farming. The establishment of experimental plots on private lands for practically demonstrating improved methods of cultivating, manuring, etc. Inspectors travel the country and give advice to settlers. Displays at Shows illustrative of the agricultural, horticultural and pastoral possibilities of the State.

OF THE SEVERAL STATES OF THE COMMONWEALTH—Continued.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Lectures and agricultural practical work, viticulture, fruit culture, botany lectures in conjunction with School of Mines and also by Horticultural Instructor.	Classes in such subjects as fruit-growing and wool classing are held in the Technical Schools at Perth and Fremantle.	Nil.
The training of young men in the practice of science of agriculture, viticulture, dairying and stock. Experimental and research work.	There are no Agricultural Colleges.	At the State Farm, Deloraine, students will be taken in 1914. The work will comprise all branches of agriculture and the growing of all fruits and crops suitable to the soil and climate.
Experimental work in manuring, irrigation, rotation of crops, stock rearing, breeding and selection of cereals. General cultural work of farm, orchard and vineyard.	Practical agriculture and orcharding are taught without any of the scientific aspects.	
Nil.	The Agricultural Commissioner for the South-west lectures on and advises on this subject.	A dairy school is held yearly in different centres.
Lectures and practical demonstrations are given by the departmental experts in various parts of the State. Special series of veterinary lectures and demonstrations and the classing and handling of wool.	Lectures are given by the dairy expert, fruit expert, irrigation and stock experts, botanist and pathologist, potato expert and poultry expert in their special work, and the Commissioner for the Wheat Belt on general agriculture, mixed farming and stock affecting the wheat growing portion of the State, and questions affecting the use and registration of fertilisers.	On dairying, pig and poultry raising, fruit pruning, horticulture, forestry, stock raising, veterinary work and general agriculture.
Nil.	Apart from the experiments carried out at State Farms, pruning demonstrations are given, individual holdings are visited and advice given on irrigation, and all questions on which the technical and professional staff is employed.	Practical instruction by experts in dairying, orcharding, farming, and poultry raising.

PARTICULARS RESPECTING AGRICULTURAL AND STOCK DEPARTMENTS

MAIN FEATURES OF ORGANISATION.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
V. <i>General work of Department—</i> (i.) Extent to which distribution of plants is carried out by Department and General Regulations governing such distribution.	Small packets of seeds are distributed for experimental purposes to farmers on condition that reports are forwarded to the Department in due course.	Select-bred seed wheat, oats and barleys are grown for ultimate distribution among farmers. These are sold in small parcels to farmers at market rates.	The distribution of seeds and plants is not free, excepting in the case of seeds new to the country and that have not been cultivated here before. Surplus seeds and plants produced by the Agricultural Colleges and State Farms are sold at market values. Trees for shade purposes for public institutions are supplied free of charge. State School gardens are supplied free with both seed and trees.
(ii.) No of inspectors employed— (a) Fruit and Orchard Inspectors ... (b) Stock Inspectors ... (c) Rabbit Inspectors ... (d) Other Inspectors ...	43 60 43 45	19 15 67 67	21 56 3 50
(iii.) Acts under which the Prevention of diseases in stock and plants and the eradication of noxious animals, insects and weeds are carried out.	Pastures Protection Act. Stock Act. Stock (Tick) Act. Vine and Vegetation Act. Fruit Pests Act.	Vegetation Diseases Act. Stock Diseases Act. Vermin Destruction Act. Milk and Dairy Supervision Act. Bees Act. Sheep Dipping Act. Thistle Act.	Diseases in Plants Act. Diseases in Stock Act. Marsupial Act. Diseases in Sheep Act. Local Authorities Act. Prickly Pear Destruction Act. Rabbit Boards Acts.
(iv.) Special features of Entomological or other work of the Department.		Economic entomology, vegetable pathology, botany and biology lectures to farmers, horticulturists, etc. on fungus, insect and other pests, and the means adopted for their eradication and prevention. Field experiments with fungicides and insecticides, etc. Cultivation of pure yeasts for wine making, bacteriology of soils, etc.	The features of entomological work in Queensland are varied, as might be expected in a country where the range of climatic conditions is so great that every known product on the world's market can be grown. It cannot therefore be said that there are any special features to be mentioned. The same may be said of other work of the Department, but the main directions are in wool, sugar, meat export, dairying, fruit growing, grain growing and stock breeding.
(v.) Special steps taken by Department for distribution of information— (a) Amongst the agriculturists of the State.	Distribution of Agricultural Gazette, Bulletins and pamphlets.	"Journal of Department of Agriculture." Annual Reports, also publications on special subjects. The Departmental exhibit is forwarded for inspection at Agricultural Shows.	The distribution of the "Queensland Agricultural Journal" and pamphlets, lectures, object lessons at farms and Agricultural College. About 75% of those who pass through the Agricultural College follow rural pursuits, and in themselves are a valuable means of distributing information.
(b) With a view to improving the market for the State's product.	An Agent-General in London and Commercial Agents in the East and America. Samples are sent to the Agent-General for exhibition purposes.	Agent-General is supplied with samples of produce, etc., which are exhibited in Great Britain. Cool storage provided by Government to assist export trade. Daily quotations of wheat in London published in press. Fruit cool stores erected by Government.	By close inspection of exports and by collecting and distributing information from markets where business is likely to be profitable.

OF THE SEVERAL STATES OF THE COMMONWEALTH—Continued.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Special varieties of cereals and fodder crops are distributed free, chiefly from the Agricultural Bureaux. Large quantities of selected cereals are raised at the various farms for sale.	A seed bureau is established at headquarters, from which varieties of farm and garden seeds are distributed to settlers for experimental purposes, and with the object of encouraging the use of those varieties of cereals, etc., which have been proved by the experts concerned to be the best adapted to the varying conditions prevailing throughout the State.	Seeds are distributed to schools and to members of the Boards of Agriculture, and forest trees to public bodies for planting in public places.
16 14 ...	15 10 8 ...	Appointed by Local Authorities. 13
The Vine, Fruit and Vegetable Protection Acts. Insecticides Acts. Phylloxera Act. Stock Diseases Act. Brands Act. Noxious animals and weeds come under the local governing bodies and not under the Agricultural Department.	Stock Disease Act 1895. Insects Pests Amendment 1898. Noxious Weeds Act 1904. Vermis Boards Act 1909. Rabbit Act 1902.	State Act. Contagious Diseases Cattle Act. Importation Diseases Cattle Act. Scab Act. Rabbit Destruction Act. Codlin Moth Act. California Thistle Act. Vegetation Diseases Act.
Work confined to economic phases of entomology and vegetable pathology aims at identifying and instructing horticulturists how to detect different insects and fungi, and to apply best remedies for prevention; tests conducted with fungicides and insecticides and uses demonstrated.	Beneficial parasites of a predaceous nature are distributed. Laboratory investigations made in diseases affecting plants, fruits, etc. Soil and water analyses made. Bacteriological investigation into stock diseases performed. Tubercular testing of dairy cattle, inoculation against tuberculosis and glanders in imported stock undertaken.	Work largely of a practical nature.
Agricultural Bureaux with 155 branches, established; the latter meet at intervals, and matters relating to agriculture discussed. "Journal of Department of Agriculture" published monthly. Special bulletins and pamphlets on agriculture and other matters published at intervals. Departmental library open to those interested.	Pamphlets are issued by the Department on questions of particular importance to agriculturists, such as dairying, irrigation, fruit culture, production of cereals, poultry raising, destruction of vermin, production of fodder crops, etc. These are kept up to date and reissued from time to time.	Information given to public press. Publication of pamphlets. Issue of Agricultural Gazette. Communications to Boards of Agriculture.
South Australian exhibits are forwarded to various shows in Great Britain; daily quotations of wheat in London published in Sth. Aust. press. Produce of all kinds shipped to London and elsewhere, trial shipments of any classes of produce for which there is likely to be an opening in Europe are forwarded to the Trade Commissioner, who make it a special feature of his work to place these to the best advantage and also to investigate and report on the possibilities of extending markets.	This work is performed by the Colonial Secretary and Agent-General's office. Much has been done in a very practical way in sending abroad samples of our produce with a view of exploiting fresh markets.	Mainly in the hands of private persons. Samples of produce of various kinds are forwarded to the Agent-General for exhibition.

§ 22. Graphical Representation of Crops.

1. Areas of Principal Crops.—A graphical representation of the areas in the Commonwealth devoted to each of the leading crops from 1860 to the present time is furnished on page 357.

(i.) *Wheat.* In the case of wheat, the Commonwealth's principal crop, the graph indicates that the fifty-three seasons under review divide themselves naturally into five distinct periods, three of moderate and fluctuating increases, and two of extremely rapid increases. Thus, between the seasons 1860-1 and 1875-6, a moderate rate of increase was in evidence, the area increasing from 640,000 to 1,420,000 acres. During the five succeeding seasons a very rapid increase took place, the total in 1880-1 amounting to over 3,000,000 acres. For fifteen years thereafter the increase in area was not large, and in two seasons, viz., 1885-6 and 1890-1, marked decreases were experienced. The total increase for the fifteen years was about 700,000 acres, the total for 1895-6 being rather more than 3,750,000 acres. The succeeding five years witnessed a rapid increase in area to a total of more than 5,600,000 acres, followed by a further period of marked fluctuations; this latter period, however, contained the four seasons of maximum wheat-cropping, viz., that of 1909-10, when an area of 6,586,000 acres was so cropped, that of 1910-11, when the area amounted to 7,372,456 acres, that of 1911-12, when 7,427,834 acres, and that of 1912-13 when 7,339,651 acres were cropped.

(ii.) *Hay.* Hay-growing, which, next to the growing of wheat for grain, is the most important branch of agriculture in the Commonwealth, will be seen from the graph to have fluctuated very considerably from year to year during the period under review, these fluctuations being due in the main to seasonal variations and to variations in the relative prices of grain and hay crops. It will be seen that the features of the graphs are a moderate increase from 1860-1 to 1875-6, a fairly rapid increase from 1875-6 to 1882-3, moderate increase thence to 1896-7, succeeded by marked fluctuations from this point onwards with, on the whole, a moderate rate of increase until 1908-9 when 2,453,000 acres were attained, succeeded by a decline in 1909-10 to 2,228,000 acres, and a slight increase in 1910-11 to 2,258,000 acres, a further increase in 1911-12, and another substantial increase in 1912-13, when the maximum of 3,217,041 acres was attained.

(iii.) *Oats.* The graph relating to oats exhibits extremely marked fluctuations from year to year in the area devoted to this crop, the general tendency, however, being one of increase, especially during the period 1892-3 to 1896-7. During the four seasons following 1905-6 the area under oats increased rapidly to 698,000 acres in 1909-10, the succeeding two years experiencing a slight falling off, when areas of 677,000 and 617,000 acres were so cropped during 1910-11 and 1911-12 respectively; the 1912-13 season, however, experienced a heavy increase, attaining a maximum of 874,284 acres.

(iv.) *Maize.* The graph relating to maize indicates that the area devoted thereto in Australia, although somewhat fluctuating, increased with fair rapidity until the season 1896-7, since when it has varied above and below the point then reached, on the whole remaining practically stationary up to 1909-10. The maximum area under maize, prior to 1910-11, viz., 372,000 acres, was attained in the season 1903-4; in 1910-11 this record was exceeded by 43,000 acres; a falling off occurred in 1911-12, and again in 1912-13, the area under crop for the latter season being 315,000 acres.

(v.) *Sugar-Cane.* In the case of sugar-cane the graph shews a fairly rapid rate of increase to 1874-5, followed by a period of five years during which the area increased but slowly. From 1879-80, however, the sugar-cane area rose rapidly until in 1884-5 a total of more than 75,000 acres was reached. Then followed a period of diminished cultivation, and it was not until 1892-3 that so high a total was again attained. After this the area rose rapidly to 136,000 acres in 1898-9, but during the next five years a decline took place, the area for 1903-4 being 132,000 acres. The season of maximum area, viz., 156,000 acres, was 1905-6. A marked decline in area was in evidence during the four following seasons; in the years 1910-11 and 1912-13, however, the former maximum was again attained, although a slight falling off took place in the intermediate season, 1911-12, to the extent of 11,000 acres.

(vi.) *Barley.* The Commonwealth barley crop has exhibited from time to time very marked fluctuations in area. The graph representing this crop shews consequently a very irregular line. The total has, on the whole, increased but slightly since 1880, rapid increases in certain years being succeeded by equally rapid decreases in subsequent years. The maximum area under barley, viz., 181,000 acres, was attained in the season 1912-13.

(vii.) *Vines.* The graph relating to area under vines, from 1872-3 onwards, indicates that there were two periods of very slow increase, one from 1872-3 to 1881-2, the other from 1893-4 to 1904-5. Between these, viz., from 1881-2 to 1893-4, a moderate rate of increase of area was experienced, the total for the Commonwealth advancing during that time from 14,600 acres to 57,400 acres, while from 1904-5 to 1909-10 the area fluctuated considerably, the general tendency evidencing a fairly consistent diminution. During the past three seasons, however, an upward tendency has been in evidence. The season of maximum area under vineyards was 1904-5, with a total of about 65,700 acres.

2. Production.—The diagram on page 358 furnishes a graphical representation of the aggregate yields from 1860-1 to 1912-13 of five of the principal crops of the Commonwealth.

(i.) *Wheat.* This graph brings out clearly the fact that while on the whole the production of wheat in the Commonwealth is increasing with fair rapidity, the fluctuations in the total quantity produced have been more marked in recent than in earlier years. Thus, since the year 1890 there have been four seasons of extremely low output, viz., in 1891-2, 1895-6, 1896-7, and 1902-3, with aggregate yields respectively of 25,700,000 bushels, 18,300,000 bushels, 20,900,000 and 12,400,000 bushels. On the other hand there have been six seasons in which the total production was exceptionally high. These will be seen from the graph to have been the seasons 1893-4, 1900-1, 1903-4, 1909-10, 1910-11, and 1912-13, the total yields for which were 37,100,000 bushels, 48,400,000 bushels, 74,100,000 bushels, 90,400,000 bushels, 95,100,000 bushels, and 92,000,000 bushels respectively. Each of these yields, with the exception of 1912-13, represented at the date of its attainment the maximum Australian wheat crop, that for 1910-11 being the highest yet reached.

(ii.) *Oats.* From 1860-1 to 1880-1 the oat crop of the Commonwealth, although exhibiting from year to year fluctuations more or less marked, gave no indications of a tendency to increase with the advance in population. This is well shewn in the diagram, by the persistence with which the graph for this period adheres to the line denoting 4,000,000 bushels, the yield for 1880-1 being actually lower than that for 1860-1. From this latter season to 1894-5 the variation was on a somewhat higher level, and is shewn in the diagram to have been in the vicinity of the line representing 6,000,000 bushels. From this point onwards a tendency to more rapid increase in production is in evidence,

obscured somewhat by extensive fluctuations corresponding to those referred to above in the case of wheat. Thus in 1895-6 and 1902-3 the total yields were only 4,400,000 and 7,300,000 bushels respectively, while in 1900-1 and 1903-4 aggregates respectively of 12,000,000 and 17,500,000 bushels were reached, this latter being the maximum oat crop of the Commonwealth. The 1912-13 crop was the highest for four seasons, and has only been exceeded on two occasions, viz., in 1903-4 and 1908-9.

(iii.) *Barley.* The Australian barley crop will be seen from the graph to have fluctuated very considerably throughout, these variations being due rather to fluctuations in the area sown than to adverse seasons. From 1879-80 to 1902-3 the curve rises above and falls below the line representing 1,500,000 bushels. For more recent years the graph bears the evidence of an increasing, though still fluctuating, output. The maximum barley crop of the Commonwealth was that of 3,860,000 bushels in 1912-13, thus exceeding the next highest-record, viz., 1908-9, by 985,000 bushels.

(iv.) *Maize.* The maize graph indicates a rapid increase in output from 1860-1 to 1869-70, followed by a moderate increase from the latter season to 1886-7, and a further rapid increase to 1891-2. From the last-mentioned season onwards the production has fluctuated considerably, but little increase has, on the whole, been experienced, the total for 1891-2 being 9,262,000 bushels, as compared with 10,771,000 bushels for 1909-10, the maximum Australian maize crop up to that date; this was exceeded in the following season, when the production of maize amounted to 13,044,000 bushels. The maize yields for 1911-12 and 1912-13 were considerably lower than that for the year immediately preceding them.

(v.) *Hay.* The graph relating to the Commonwealth output of hay indicated a fairly continuous increase in production from the season 1860-1, when the total stood at 340,000 tons, to that of 1887-8, when it reached 1,330,000 tons. In subsequent years marked fluctuations have been in evidence, but the tendency has, on the whole, been one of increase. The maximum hay crop of the Commonwealth was that of the season 1912-13, when the total production reached 3,955,000 tons.

SECTION IX.

FARMYARD AND DAIRY PRODUCTION.

§ 1. Introductory.

1. **General.**—The introduction of cattle into Australia, and the early history of the dairying industry are referred to in some detail in previous issues of this work (see Official Year Book No. 6, pp. 430 *et seq.*). It may here be noted that the original stock has been crossed with specially imported stud cattle, while further judicious crossing of strains has resulted in an increased and improved milk supply. In Australia, dairy cattle thrive in the open throughout the year, local climatic conditions demanding no protection other than tree plantations for shelter, and rugging in the coldest weather. Indigenous and imported grasses furnish food during the greater part of the year, and winter fodder, when necessary, is given to the cattle in the fields. With the adoption of scientific methods in the treatment of animals and pasturage and in the process of manufacture, coupled with effective State supervision, the industry has shewn rapid expansion.

2. **Official Supervision of Industry.**—Dairy experts, under the supervision of the various State Agricultural Departments, give instruction in approved methods of production, and inspect animals, buildings, and marketable produce. A high standard of cleanliness, both of *personnel* and *matériel*, prevails. Financial assistance of a temporary nature is also given, advances made being generally repaid with promptitude.

The export trade is regulated by the terms of the Commonwealth Commerce Act 1905 and regulations thereunder. The provisions of this Act are set out in detail in Official Year Book No. 6, pp. 431-2. It will be sufficient to note here that true trade description, etc., must be marked on all produce intended for export, while official inspection ensures the maintenance of purity and quality. Upon request of the exporter the goods are certificated by the inspector.

3. **Mixed Farming.**—Dairying is not now, as formerly, wholly confined to farmers, since many graziers in a large way of business have lately given it their attention. In non-coastal regions it is generally carried on in conjunction with agriculture and sheep-raising, sufficient fodder being grown to carry the cattle through the winter months. Local wants are thus met, and in many places remote from the metropolis well-equipped factories have been established.

4. **Factory System.**—Cream separation and butter-making are often carried on together under the co-operative system. The creation of large central butter factories, supplied by numerous separating establishments or "creameries," has resulted in a considerable reduction in the cost of manufacture, since improved appliances, such as refrigerators, may be profitably worked at the larger establishments. The product is also of a more uniform quality. The number of farmers who adhere to hand processes is rapidly diminishing. Formerly the average quantity of milk used per pound of hand-made butter was about 3 gallons, but separator butter requires only about 2½ gallons.

5. **Butter and Cheese Factories.**—The establishments in the Commonwealth where the manufacture of butter, cheese, and condensed milk was carried on, numbered 530 in 1912. These were distributed as regards the various States as follows:—New South Wales, 176; Victoria, 197; Queensland, 81; South Australia, 48; Western Australia, 3; Tasmania, 25.

§ 2. Milk, Butter, and Cheese.

1. **Dairy Herds.**—Since the drought year 1902 there has been a general increase in the number of dairy cows. In New South Wales, Victoria, South Australia proper, and Tasmania—as will be seen from the table of cattle and dairy cattle given below—the proportion of dairy cattle to all cattle is high. In Queensland, the Northern Territory, and Western Australia there is a greatly preponderating number of other cattle dairying not being firmly established in the tropical regions of the Continent. In southern Queensland, however, the industry has developed remarkably during the last decade. In the tables which follow in this section, the returns for the Northern Territory and the Federal Territory are, unless shewn separately, included in South Australia and New South Wales respectively, the dairy products from the newly-acquired Commonwealth territories being small:—

CATTLE AND DAIRY CATTLE, COMMONWEALTH, 1908 to 1912.

State.			1908.	1909.	1910.	1911.	1912.
New South Wales	...	All Cattle	2,955,934	3,027,727	3,140,307	3,185,824	3,083,726
	...	Dairy Cows	736,683	755,879	826,443	855,926	852,040
Victoria	...	All Cattle	1,574,162	1,549,640	1,547,569	1,647,127	1,508,089
	...	Dairy Cows	609,166	625,063	668,777	699,555	655,939
Queensland	...	All Cattle	4,321,600	4,711,782	5,131,699	5,073,201	5,210,891
	...	Dairy Cows	304,281	333,839	365,444	357,095	375,660
South Australia	...	All Cattle	340,376	344,034	384,862	393,566	383,418
	...	Dairy Cows	106,269	110,757	119,628	121,803	114,734
Western Australia	...	All Cattle	741,788	793,217	825,040	843,638	806,294
	...	Dairy Cows	31,522	29,176	30,785	27,740	27,310
Tasmania	...	All Cattle	205,827	199,945	201,854	217,406	222,181
	...	Dairy Cows	50,931	50,996	52,966	56,858	60,160
Northern Territory	...	All Cattle	407,992	414,046	513,383	459,780	405,552
	...	Dairy Cows	546	464	556	300	300
Federal Territory	...	All Cattle	*	*	*	8,412	7,108
	...	Dairy Cows	*	*	*	1,192	742
Commonwealth	...	All Cattle	10,547,679	11,040,391	11,744,714	11,828,954	11,577,259
	...	Dairy Cows	1,839,398	1,906,174	2,064,599	2,120,469	2,086,885

* Included under New South Wales.

2. **Milk.**—The annual quantity of milk produced per dairy cow varies greatly with locality and season, probably reaching as high as 500 gallons, but averaging for the whole of Australia, for all dairy cows and for all seasons, something under 300 gallons per annum. The best yields over a series of years appear to be in Victoria, New South Wales, South Australia, and Tasmania, while Western Australia is below Queensland. In the following table the annual average yields per cow for the last five years are taken from the number of dairy cows which were, during any part of the year, milking. The average given is considerably below that for cows which were yielding during the greater part of the year. It will be seen that the highest averages obtain in those States which have adopted more scientific methods of dairying, such as systematic breeding, culling of herds, milk testing, etc.

PRODUCTION OF MILK, COMMONWEALTH, 1908 to 1912.

Heading.	N.S.W.*	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1908—							
Dairy cows ... No.	736,683	609,166	304,281	106,815	31,522	50,931	1,839,398
Production of milk gals.	188,518,562	148,122,200	63,934,402	28,883,000	4,531,212	13,520,000†	447,509,376
Aver. yield per cow gals.	257	243	210	270	144	265	243
1909—							
Dairy cows ... No.	755,879	625,063	333,839	111,221	29,176	50,996	1,906,174
Production of milk gals.	201,183,337	162,994,658	70,642,888	29,778,032	4,893,446	11,600,000†	481,092,361
Aver. yield per cow gals.	266	261	212	268	168	227	252
1910—							
Dairy Cows ... No.	826,443	668,777	365,444	120,184	30,785	52,966	2,064,599
Production of milk gals.	235,577,702	196,674,373	87,648,322	34,672,756	5,125,124	13,300,000*	572,998,277
Aver. yield per cow gals.	285	294	240	288	166	251	278
1911—							
Dairy Cows ... No.	857,118	699,555	357,095	121,803	27,740	56,858	2,120,169†
Production of milk gals.	237,623,000	238,149,700	71,770,148	27,952,612	5,017,004	14,214,500†	594,726,964†
Aver. yield per cow gals.	277	340	200	230	181	250	280
1912—							
Dairy Cows ... No.	852,782	655,939	375,660	114,734	27,310	60,160	2,086,585†
Production of milk gals.	225,446,209	199,296,920	82,977,730	27,547,870	5,215,779	15,040,000†	555,524,508†
Aver. yield per cow gals.	264	304	221	240	191	250	266

* Including figures for Federal Territory, which in 1911 were 1192 dairy cows; 153,090 gallons of milk averaging 128 gallons per cow; and in 1912, 742 dairy cows; 106,647 gallons of milk, averaging 144 gallons per cow. † Estimated. ‡ Exclusive of Northern Territory.

3. **Butter and Cheese.**—The butter output shews, in general, a tolerably steady increase since the drought year 1902, the most marked development being in Queensland. The production of butter reached its highest figures in 1911, the highest previous yields being in 1910 and 1906. The year 1910 marks the highest cheese production, the return being somewhat better than those for 1912 and 1911. In both butter and cheese a decrease took place in some of the States in 1907 and 1908, due to the dryness of the season. There was a recovery in 1909. For the five years from 1908 to 1912 the figures are:—

PRODUCTION OF BUTTER AND CHEESE, COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
BUTTER.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales* ...	61,380,876	62,865,608	76,624,830	83,204,568	76,609,528
Victoria ...	48,461,398	55,166,565	70,603,787	86,500,474	67,655,834
Queensland ...	23,838,357	24,592,711	31,258,333	27,858,535	30,307,339
South Australia ...	8,130,560	8,482,168	10,717,486	9,694,666	8,394,557
Western Australia ...	865,593	414,453	641,491	498,047	448,799
Tasmania† ...	3,140,573	2,751,757	3,365,982	3,817,455	3,778,104
Commonwealth ...	145,817,357	154,273,252	193,211,909	211,573,745	187,194,161
CHEESE.					
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales ...	4,763,360	4,775,268	5,191,089	5,460,652	5,454,685
Victoria ...	4,328,644	5,025,834	4,530,803	4,549,843	4,176,778
Queensland ...	3,199,510	3,662,497	4,146,661	3,718,257	3,947,615
South Australia ...	1,556,894	1,578,378	1,796,281	1,526,930	1,958,027
Western Australia ...	980	1,570	3,306	900	
Tasmania† ...	910,400	731,290	868,781	630,130	623,386
Commonwealth ...	14,759,788	15,774,837	16,537,011	15,886,712	16,160,491

* Including Federal Territory, where 27,630 lbs. of butter were produced in 1911; and 16,561 lbs. in 1912. † Estimated

4. **Concentrated Milk.**—"Condensed" or "concentrated" milk denotes milk the bulk of which is reduced by evaporation, no sweetening agent being added. When a sweetening agent is added it is called "preserved" milk. Small quantities of such milk were made prior to 1911, in which year the output for the Commonwealth was nearly doubled. In 1912 there was a further notable increase, the figures for Victoria for these years shewing a marked expansion. There is still a considerable import of milk, as will be seen from the tables hereunder; but in 1912, for the first time, the balance of trade was in favour of exports. No condensed or concentrated milk is made in South Australia, Western Australia, or Tasmania. In New South Wales, Victoria, and Queensland the following quantities are returned for the last five years:—

CONDENSED AND CONCENTRATED MILK MADE, 1908 to 1912.

Year.	N.S.W.	Victoria.	Queensland	Commonwealth.
	lbs.	lbs.	lbs	lbs.
1908	2,399,673	3,308,854	3,935,024	9,643,551
1909	2,400,687	3,487,312	7,038,202	12,926,201
1910	1,940,481	2,707,110	7,843,670	12,491,261
1911	3,058,497	13,697,691	6,227,519	22,983,707
1912	3,636,519	18,500,011	7,923,381	30,059,911

5. **Oversea Trade in Milk, Butter, and Cheese.**—The tables following give the imports, exports, and net exports or imports of butter, cheese, and milk. In each of the five years exports of butter exceeded imports; in three the cheese import was heavier than the export; and this was the case in all except the last year with milk.

IMPORTS, EXPORTS, AND NET IMPORTS OF BUTTER, CHEESE AND MILK, COMMONWEALTH, 1908 to 1912.

IMPORTS.

Products.	1908.	1909.	1910.	1911.	1912
Butter lbs.	40,874	80,111	71,695	22,697	44,142
" £	2,368	4,078	3,570	1,081	1,989
Cheese lbs.	566,808	367,504	303,155	318,891	443,847
" £	20,433	14,720	13,772	14,461	19,988
Milk—concentrated and preserved ¹ lbs.	9,145,306	7,439,232	8,543,158	4,166,117	1,215,351
" " " " £	180,194	145,736	135,297	74,278	25,949

EXPORTS.

Butter lbs.	51,206,359	55,700,967	87,928,151	101,722,136	66,685,056
" £	2,387,450	2,402,619	3,952,808	4,637,362	3,342,642
Cheese lbs.	153,589	203,477	921,583	1,159,363	146,022
" £	5,237	5,771	22,178	27,243	5,760
Milk—concentrated and preserved ¹ lbs.	309,789	360,821	517,634	1,261,323	1,821,583
" " " " £	7,013	7,852	10,289	21,990	37,876

NET EXPORTS.²

Butter lbs.	51,165,485	55,620,876	87,856,456	101,699,529	66,610,914
" £	2,385,082	2,398,541	3,949,238	4,636,281	3,340,653
Cheese lbs.	413,219	164,027	618,428	840,472	297,825
" £	15,196	8,949	8,406	12,782	14,228
Milk—concentrated and preserved ¹ lbs.	8,835,517	7,078,411	8,025,524	2,905,794	606,232
" " " " £	173,181	137,884	125,008	52,288	11,927

1. See definition above.

2. — signifies net imports.

6. **Local Consumption of Butter and Cheese.**—The total production of butter and cheese, with the net export or import subtracted or added, gives approximately the consumption in the Commonwealth. In the period considered hereunder, 1910 and 1911 were the years in which the local supply of cheese was adequate:—

BUTTER AND CHEESE LOCALLY CONSUMED, 1908 to 1912.

Product.			1908.	1909.	1910	1911.	1912.
			lbs.	lbs.	lbs.	lbs.	lbs.
Butter	... Total	...	94,151,872	98,652,376	105,569,150	109,874,216	120,500,247
	... Per head of mean population	...	22.4	23.1	24.2	24.5	25.9
Cheese	... Total	...	15,173,007	15,938,864	15,918,853	15,046,240	16,458,316
	... Per head of mean population	...	3.6	3.8	3.7	3.4	3.5

The consumption in 1912 averaged 25.9 lbs. of butter and 3.5 lbs. of cheese per head of mean population, an amount probably unsurpassed anywhere. The consumption of butter and cheese in the United Kingdom is given as about 20 lbs. per head.

§ 3. Pigs, Bacon, etc.

1. **Pigs.**—Great attention has been paid, both privately and by the various State Governments, to the improvement of marketable qualities in pigs. The number of pigs in the Commonwealth from 1908 to 1912 is shewn below:—

NUMBER OF PIGS, COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	215,822	237,849	321,632	370,700	293,450
Victoria ...	179,358	217,921	333,281	348,069	240,072
Queensland ...	124,749	124,803	152,212	173,902	143,695
South Australia ...	78,454	80,410	96,386	93,130	69,832
Western Australia ...	46,652	47,062	57,628	55,635	47,351
Tasmania ...	47,945	55,705	63,715	67,392	49,152
Northern Territory ...	2,711	1,887	996	1,500	1,500
Federal Territory ...	†	†	†	393	203
Commonwealth ...	695,691	765,137	1,025,850	1,110,721	845,255

† Included in New South Wales.

Prior to 1911 the number of pigs was highest in 1904, when for the first time it was over a million; prior to 1899 it had never reached 900,000. That year, the two immediately following, and 1904, 1905, 1910 and 1911 mark the highest totals. An examination of the returns shews remarkable fluctuations. There was a general decrease in 1906 and the two following years. Recovery began in 1909, and continued through 1910 and 1911; but 1912 shews a heavy fall. The number of pigs per head of population, and the number per square mile, will be found in the tables of live stock, pages 275 and 276.

2. **Bacon and Ham.**—From 1905 to 1908 the production of bacon and ham in the Commonwealth shewed little annual variation. In 1909 there was a considerable falling-off, but large increases in the last three years. It will be noticed from the table above that the number of pigs in Australia in 1908 was much below the average.

PRODUCTION OF BACON AND HAM, COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
	lbs.	lbs.	lbs.	lbs.	lbs.
New South Wales* ...	9,488,299	9,931,377	12,620,067	16,102,827	16,526,376
Victoria ...	14,411,401	13,620,485	16,438,837	19,546,772	20,043,706
Queensland ...	11,324,323	9,228,317	10,758,963	11,667,654	12,437,019
South Australia ...	3,392,162	3,348,050	3,741,942	4,311,497	3,771,064
Western Australia ...	152,896	120,623	121,154	97,136	114,950
Tasmania† ...	1,333,856	1,526,115	1,468,789	1,538,766	1,299,060
Commonwealth ...	40,102,937	37,774,967	45,149,752	53,264,652	54,192,175

* Including Federal Territory, where 22,670 lbs. of bacon and ham were produced in 1911; and 15,196 lbs. in 1912. † Estimated.

3. **Oversea Trade in Pig Products.**—The oversea trade in pigs and pig products is shewn in the following tables:—

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS AND LARD, COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
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BACON AND HAM.

Imports ...	... lbs.	273,922	244,903	204,488	201,309	294,130
" ...	... £	10,013	9,384	8,687	8,566	11,962
Exports ...	... lbs.	391,820	403,801	1,605,699	2,340,612	2,174,114
" ...	... £	18,360	18,979	57,060	74,178	68,503
Net Exports ...	... lbs.	117,898	158,898	1,401,211	2,139,303	1,879,984
" ...	... £	8,347	9,595	48,373	65,612	56,541

FROZEN PORK.

Imports ...	... lbs.	110,647	109,620	106,757	...	79,052
" ...	... £	3,329	3,301	3,227	...	2,592
Exports ...	... lbs.	826,102	394,559	741,410	1,641,013	897,929
" ...	... £	20,446	9,318	17,087	33,639	16,661
Net Exports ...	... lbs.	715,455	284,939	634,653	1,641,013	818,877
" ...	... £	17,117	6,017	13,860	33,639	14,069

PIGS.

Imports ...	... No.	39	31	50	35	14
" ...	... £	968	1,177	799	539	198
Exports ...	... No.	117	229	303	385	609
" ...	... £	297	460	477	748	1,025
Net Exports ¹ ...	... No.	78	193	253	350	595
" ...	... £	— 671	— 717	— 322	209	827

1. — signifies net imports.

IMPORTS, EXPORTS, AND NET EXPORTS OF BACON AND HAM, FROZEN PORK, PIGS, AND LARD, COMMONWEALTH, 1908 to 1912—Continued.

Particulars.				1908.	1909.	1910.	1911.	1912.
LARD.								
Imports ...	...	...	lbs.	313,060	358,213	198,897	387,626	794,961
" ...	...	...	£	7,681	9,148	5,573	9,870	22,096
Exports ...	...	...	lbs.	511,774	1,618,995	3,112,190	3,399,386	2,092,422
" ...	...	...	£	10,906	28,948	62,664	57,861	37,063
Net Exports ...	...	...	lbs.	198,714	1,260,782	2,913,293	3,011,760	1,297,461
" ...	...	...	£	3,225	19,800	57,091	47,991	14,967

From 1901 to 1903 there was a considerable net import of bacon and ham, but for the following years there was a large net export. The local production of frozen pork and lard was for each of the years shewn more than sufficient for the local demand. The net export of pig products was considerably greater in 1910 and 1911 than in previous years, but there was a decline in 1912.

4. **Local Consumption of Bacon and Ham.**—From 1904 to 1912 the production of bacon and ham was sufficient to meet the local demand, and there was a surplus for export, but in 1901, 1902, and 1903 this was otherwise, and considerable quantities were imported.

BACON AND HAM LOCALLY CONSUMED, 1908 to 1912.

Consumption.		1908.	1909.	1910.	1911.	1912.
		lbs.	lbs.	lbs.	lbs.	lbs.
Total ...	...	39,985,039	37,616,069	48,748,541	51,125,349	52,312,191
Per head of mean population ...	...	9.5	8.8	10.0	11.4	11.3

5. **Total Dairy Production.**—The total dairy production of the Commonwealth in 1912 is shewn below:—

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1912.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	O'wealth.
MILK.							
	gallons. *	gallons.	gallons.	gallons.	gallons.	gallons.	gallons.
On Dairy & other Farms	225,446,209	199,296,920	82,977,730	27,547,870	5,215,779	15,040,000†	555,594,508‡
BUTTER.							
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
In Factories ...	72,421,770	62,227,144	28,184,832	4,809,288	120,906	3,278,104	171,042,044
On Dairy & other Farms	4,187,758*	5,428,690	2,122,507	3,585,269	327,893	500,000†	16,152,117
Total ...	76,609,528*	67,655,834	30,307,339	8,394,557	448,799	3,778,104†	187,194,161

TOTAL DAIRY PRODUCTION, COMMONWEALTH, 1912—Continued.

Where Produced.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
CHEESE.							
In Factories ...	lbs. 3,463,036	lbs. 2,171,913	lbs. 3,833,116	lbs. 1,954,770	lbs. ...	lbs. 523,386	lbs. 11,946,221
On Dairy & other Farms	1,991,649	2,004,865	114,499	3,257	...	100,000†	4,214,270
Total ...	5,454,685	4,176,778	3,947,615	1,958,027	...	623,386†	16,160,491

CONDENSED OR CONCENTRATED MILK.

In Factories ...	lbs. 3,636,513	lbs. 18,500,011	lbs. 7,923,381	...	...	...	lbs. 30,059,911
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BACON AND HAM.

In Factories ...	lbs. 13,766,482	lbs. 16,044,228	lbs. 11,410,781	lbs. 2,672,256	lbs. ...	lbs. 799,060	lbs. 44,692,807
On Dairy & other Farms	2,759,894*	3,999,478	1,026,238	1,098,808	114,950	500,000†	9,499,368
Total ...	16,526,376*	20,043,706	12,437,019	3,771,064	114,950	1,299,060†	54,192,175

* Including Federal Territory, where there was produced 106,647 gallons of milk; also 16,561 lbs. of butter on farms; also 15,198 lbs. of bacon and hams (on farms). † Estimated. ‡ Including 70,000 gallons estimated for Northern Territory.

§ 4. Poultry Farming.

1. **Development of the Industry.**—Poultry stocks are usually maintained by farmers and furnish a considerable addition to the annual agricultural or dairying returns. During recent years the poultry industry has assumed an independent position among rural industries. It is also carried on in conjunction with pig farming. Special poultry farms have been instituted for scientific breeding. Poultry experts engaged by the States Governments give lectures and instruction. Poultry for consumption is extensively reared, and the egg-producing qualities of the birds have also been greatly improved by careful breeding. Co-operative egg collecting circles have been formed in some districts; eggs are also delivered with the milk and cream to the local butter factories and thence forwarded to market.

2. **Production of Poultry.**—Figures for the yield of poultry products are difficult to obtain. The following values are returned :—

ESTIMATED VALUE OF POULTRY AND EGGS, COMMONWEALTH, 1908-9 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908-9 ...	1,202,000	1,547,000	*	399,349	133,544	*	3,281,893†
1909-10 ...	1,309,000	1,570,000	185,000	431,575	160,562	*	3,656,137†
1910-11 ...	1,170,000	1,592,000	204,000	496,311	168,251	227,000	3,857,562
1911-12 ...	1,200,000§	1,618,500	195,000	533,941	175,890	230,000	3,953,331
1912-13 ...	1,434,000§	1,825,010	188,000	541,489	183,689	230,000	4,402,188

* Not available. † Excluding Queensland and Tasmania. ‡ Excluding Tasmania.

§ Including Federal Territory, where the estimated value was £1800 in 1911-12; and £1880 in 1912-13.

3. Oversea Trade in Poultry Products.—The imports and exports of eggs shew a considerable balance on the side of imports in each of the years 1901 to 1906 and in 1909, 1910, 1911 and 1912. In 1907 the export greatly exceeded the import, and in 1908 the imports were greater in quantity, but less in value, than the exports. The figures for frozen poultry indicate a considerable oversea export.

IMPORTS, EXPORTS, AND NET EXPORTS OF EGGS AND LIVE AND FROZEN POULTRY, COMMONWEALTH, 1908 to 1912.

Particulars.				1908.	1909.	1910.	1911.	1912.
EGGS.								
Imports	...	...	doz.	31,247	38,931	39,330	40,969	45,160
"	...	...	£	856	1,007	1,111	1,209	1,464
Exports	...	...	doz.	17,261	10,527	3,853	5,734	6,211
"	...	...	£	1,082	713	326	1,124	518
Net exports ¹	...	...	doz.	— 13,986	— 28,404	— 35,477	— 35,235	— 38,949
"	"	...	£	226	294	785	85	946
LIVE POULTRY.								
Imports	...	...	No.	2,372	1,862	1,274	2,398	1,720
"	...	...	£	633	944	663	964	1,460
Exports	...	...	No.	2,290	4,708	3,251	2,218	3,859
"	...	...	£	1,043	1,475	1,057	1,068	1,231
Net exports ¹	...	...	No.	— 82	2,846	1,977	180	2,139
"	"	...	£	410	531	394	104	229
FROZEN POULTRY.								
Imports	...	...	lbs.	2,242	3,565	4,811	5,653	2,102
"	...	...	£	75	100	131	257	64
Exports	...	...	pair	22,444	5,828	7,680	16,869	23,390
"	...	...	£	7,335	3,127	4,171	7,470	10,144
Net exports	...	...		₂	₂	₂	₂	₂
"	"	...	£	7,260	3,027	4,040	7,213	10,080

1. — signifies net imports.

2. Quantity not available.

§ 5. Bee Farming.

1. The Bee-farming Industry.—Bee farming, like poultry farming, has ordinarily been an adjunct to agricultural or dairying industries, and can hardly yet be said to have been organised as a distinct industry. The annual returns of honey from the hives range between 20 lbs. and 60 lbs. per hive.

The value of the export of honey from Australia was only £3361 in 1908, £2675 in 1909, £2439 in 1910, £4414 in 1911, and £1924 in 1912. It is believed that this export could be considerably increased. Australian honey exhibited in the Franco-British Exhibition in London in 1908, obtained the highest award, thus evidencing the purity of its flavour.

2. Production of Honey and Beeswax.—The particulars of honey production are as given below:—

NUMBER OF HIVES AND PRODUCTION OF HONEY AND BEESWAX, 1909 to 1913.

State.	Bee Hives.			Honey Produced.		Beeswax Produced	
	Productive	Un-productive.	Total.	Quantity.	Value.	Quantity.	Value.
1909.	No.	No.	No.	lbs.	£	lbs.	£
New South Wales	53,602	16,344	69,946	3,064,526	31,920	58,697	3,420
Victoria ...	†	†	40,595	2,373,628	26,544	38,674	1,934
Queensland ...	10,999	3,283	14,282	445,432	4,119	9,707	492
South Australia ...	19,549	4,471	24,020	1,007,717	10,497	12,063	603
Western Australia	13,928	2,631	16,559	309,109	3,122	6,217	466
Commonwealth*	†	†	165,402	7,200,412	76,202	125,358	6,915
1910.							
New South Wales	46,813	17,986	64,799	2,066,330	25,800	53,006	3,100
Victoria ...	32,914	9,718	42,632	1,611,284	18,463	22,369	1,305
Queensland ...	11,322	3,135	14,457	548,171	5,224	11,849	605
South Australia ...	17,551	6,450	24,001	812,487	8,463	10,059	503
Western Australia	10,902	2,837	13,739	409,345	4,264	9,841	574
Commonwealth*	119,502	40,126	159,628	5,447,617	62,214	107,124	6,087
1911.							
New South Wales	55,958	14,308	70,266	2,765,618	37,700	72,617	3,700
Victoria ...	37,541	15,221	52,762	2,308,405	24,046	34,695	1,880
Queensland ...	11,271	4,104	15,375	517,565	5,100	11,798	595
South Australia ...	22,786	5,204	27,990	996,376	10,379	10,608	552
Western Australia	8,686	1,934	10,620	388,507	4,231	7,215	541
Commonwealth*	136,242	40,771	177,013	6,926,471	81,456	136,933	7,268
1912.							
New South Wales	62,254	11,801	74,055	3,363,253	35,000	67,358	4,000
Victoria ...	37,052	16,659	53,711	1,635,260	20,441	28,405	1,420
Queensland ...	11,857	3,088	14,945	574,973	5,750	11,419	570
South Australia ...	18,015	10,029	28,044	760,094	8,709	9,745	528
Western Australia	8,686	2,032	10,718	416,823	5,210	13,730	1,030
Tasmania ...	†	†	†	†	3,000†	†	300†
Commonwealth	137,864*	43,609*	181,473*	6,750,403*	78,110	130,657*	7,848
1913.							
New South Wales	50,272	12,844	63,116	2,409,795	30,750	49,734	3,060
Victoria ...	42,317	10,406	52,723	3,277,590	40,560	45,354	2,807
Queensland ...	12,037	3,804	15,841	581,228	5,918	11,744	613
South Australia ...	24,274	2,954	27,228	1,446,364	18,080	18,054	1,053
Western Australia	7,047	1,486	8,533	292,515	3,656	6,073	455
Tasmania ...	†	†	†	†	3,000†	†	300†
Commonwealth	135,947*	31,494*	167,441*	8,007,492*	101,964	130,959*	8,288

* Exclusive of Tasmania.

† Not available.

‡ Estimated.

‡ Including Federal Territory, where in 1912 the hives numbered 552, of which 524 were productive; 38,764 lbs. of honey, valued £400, and 672 lbs. of beeswax, valued at £38. were produced. In 1913, the hives numbered 364, of which 357 were productive; 19,645 lbs. of honey, valued at £250; and 467 lbs. of beeswax, valued at £30, were produced.

§ 3. **Oversea Trade in Bee Products.**—Both honey and beeswax are produced in the Commonwealth in sufficient quantities to supply all local requirements, and a considerable quantity of each is sent oversea.

**IMPORTS, EXPORTS, AND NET EXPORTS OF HONEY AND BEESWAX,
COMMONWEALTH, 1908 to 1912.**

Particulars.				1908.	1909.	1910.	1911.	1912
HONEY.								
Imports	...	...	... lbs.	9,315	9,842	872	2,477	5,024
"	...	...	... £	98	249	23	93	89
Exports	...	...	... lbs.	226,465	168,953	182,083	353,367	135,318
"	...	...	... £	3,361	2,675	2,439	4,414	1,924
Net Exports	...	...	... lbs.	217,150	159,111	181,211	350,890	130,294
" "	...	...	... £	3,263	2,426	2,416	4,321	1,835
BEESWAX.								
Imports	...	...	... lbs.	7,527	19,041	7,821	8,335	7,212
"	...	...	... £	460	1,112	505	564	536
Exports	...	...	... lbs.	41,177	35,540	26,408	12,691	9,453
"	...	...	... £	2,479	2,064	1,587	751	581
Net Exports	...	...	... lbs.	33,650	16,499	18,587	4,356	2,241
" "	...	...	... £	2,019	952	1,082	187	45

§ 6. Summary of Australian Farmyard and Dairy Products.

The value of the principal farmyard and dairy products raised in the Commonwealth in 1912 was:—

**VALUE OF THE PRINCIPAL FARMYARD AND DAIRY PRODUCTS IN THE
COMMONWEALTH DURING THE YEAR 1912.**

Produce.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aus.	Tas.	N. T.	Fed. Ter.	C'wealth.
	£	£	£	£	£	£	£	£	£
Milk, cons'm'd as such	625,200	731,000	173,800	158,600	84,000	79,200	2,500	1,100	1,855,400
Butter	3,907,600	3,478,800	1,481,800	450,900	25,600	191,000	(a)	800	9,536,500
Cheese	173,300	125,600	118,800	58,400	...	18,000	(a)	...	494,100
C'densd & concn'ted milk	49,408	362,480	167,273	...	...	...	...	...	579,161
Bacon & ham	481,500	747,100	375,400	125,100	3,800	42,500	...	500	1,775,900
Poultry & eggs	1,432,120	1,825,010	188,000	541,489	183,689	230,000	...	1,880	4,402,188
Honey & wax	33,530	43,367	6,531	19,133	4,111	3,300	...	280	110,252

(a) Information not available.

§ 7. Summary of Australian Farmyard and Dairy Products Exported, 1907 to 1912.

The quantities and values of Australian farmyard and dairy products exported from the Commonwealth during each of the years 1907 to 1912 are shewn below :—

QUANTITIES OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING EACH OF THE YEARS 1907 to 1912.

Products.	1907.	1908.	1909.	1910.	1911.	1912.
Beeswax lbs.	27,058	41,177	35,540	26,408	12,671	9,347
Butter "	66,076,915	51,193,311	55,644,925	87,894,943	101,722,136	66,679,120
Cheese "	491,209	131,001	193,204	911,760	1,149,134	136,452
Egg albumen and yolk "	*	*	*	*	*	*
Eggs doz.	88,615	17,113	10,359	3,753	5,542	6,163
Feathers, undressed "	*	*	*	*	*	*
Honey lbs.	102,047	226,465	168,953	182,023	353,367	135,318
Lard "	458,059	511,016	1,617,442	3,105,307	3,399,209	2,090,477
Meats—						
Bacon and ham "	415,251	389,718	396,342	1,604,362	2,338,299	2,172,660
Frozen poultry pair	31,261	22,444	5,828	7,680	16,669	23,390
" pork lbs.	1,446,758	826,102	394,559	741,410	1,641,013	897,929
Milk, concentrated & preserved "	162,367	139,165	169,310	266,934	1,017,072	1,646,414
Pigs, living No.	185	117	229	303	385	609
Poultry, living "	3,280	2,290	4,708	3,251	2,198	3,849

* Quantity not available.

VALUE OF AUSTRALIAN FARMYARD AND DAIRY PRODUCTS EXPORTED FROM THE COMMONWEALTH DURING THE YEARS 1907 to 1912.

Products.	1907.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
Beeswax	1,617	2,479	2,064	1,587	749	575
Butter	2,890,261	2,386,548	2,399,693	3,951,131	4,637,362	3,342,320
Cheese	12,733	4,305	6,337	21,730	26,754	5,303
Egg albumen and yolk	...	535	4	724	651	...
Eggs	3,419	1,074	706	320	437	516
Feathers, undressed	2,610	2,636	2,244	2,021	2,971	2,926
Honey	1,541	3,361	2,675	2,435	4,414	1,924
Lard	8,547	10,884	28,876	62,474	67,854	37,007
Meats—						
Bacon and ham	17,348	18,258	18,682	56,995	74,065	68,439
Frozen poultry	8,556	7,335	3,127	4,171	7,470	10,144
" pork	28,406	20,446	9,818	17,067	39,639	16,661
Milk, concentrated and preserved	2,924	3,139	3,319	4,865	16,675	34,317
Pigs, living	383	297	460	477	748	1,025
Poultry, living	1,248	1,043	1,475	1,057	1,038	1,209
Total	2,979,593	2,462,340	2,477,980	4,127,074	4,864,827	3,522,366

§ 8. British Imports of Dairy Products.

1. Value of Britain's Imports of Dairy Products.—Great Britain has paid annually since 1908, considerably more than £20,000,000 for imported butter, the value of the imports in 1908, 1909, 1910, 1911 and 1912, being £24,081,000, £22,425,000, £24,493,000, £24,600,000 and £24,854,000 respectively; for imported cheese the amounts in the years

named were respectively £6,684,000, £6,830,000, £6,810,000, £7,140,000 and £7,414,000; for bacon and ham, £17,565,000, £16,914,000, £15,918,000, £17,391,000 and £17,276,000 respectively; and for pork, £1,660,000, £1,336,000, £1,500,000, £1,413,000 and £1,101,000 respectively.

2. **Butter.**—Australia in 1911 stood second, and in 1912 third, in the value of butter imported into the United Kingdom; but the import of other Australian dairy products was inconsiderable.

IMPORT OF BUTTER INTO THE UNITED KINGDOM, 1912.

Country from which Imported.	Quantity.	Value.	Country from which Imported.	Quantity.	Value
	Cwt.	£		Cwt.	£
Denmark ...	1,618,048	10,356,001	Argentine Republic	67,244	396,964
Russia ...	683,650	3,656,742	Norway...	30,634	192,183
Australia...	549,396	3,225,886	United States ...	2,596	15,250
New Zealand	349,012	2,148,192	Other Countries ...	9,197	48,014
Sweden ...	335,014	2,113,871			
France ...	246,652	1,559,452			
Netherlands	113,716	641,638	Total ...	4,005,159	24,354,193

In October, 1907, a falling-off of imports of Australian butter into Great Britain was noticed, with the result that, three months later, there was a heavy shortage, accompanied by rapidly rising prices, until a limit was reached with 156s. per cwt., the highest recorded for Australasian butter. After a short period of high values in February, 1908, prices steadied at 116s., and then gradually fell to 104s. in the middle of May, when European grass-fed butter was ready for the British market. In January, 1910, the average price was 111s. After a fall in 1911, 134s. was reached in the middle of January, 1912. These high values were followed by a rapid decline. Prices in London during the last five years have been considerably higher than the average of any previous year since the Australian export trade was instituted twenty years ago. A marked approach to Danish values has lately been made in the prices of Australian butter.

3. **Cheese.**—The value of the British cheese import in 1912 was £7,414,000, of which nearly four and a half million pounds' worth was received from Canada. Small experimental shipments from Australia were made in 1908 and following years, a fair price being realised. In 1911, the value of the import from Australia was £27,000; but in 1912 it was under £5000.

4. **Bacon and Ham.**—Of a total import of bacon and ham valued in 1912 at £17,276,000, Great Britain received goods to the value of £7,839,000 from Denmark; £7,340,000 from the United States; and £1,407,000 from Canada. The British import from Australia was small, but experimental shipments have been made during recent years.

5. **Pork.**—The total value of British imports of pork (including refrigerated, frozen and salted) was £1,101,000 in 1912. Of this the value of Australian produce was *nil*, whilst from the Netherlands pork valued at £706,000 was imported into Great Britain.

6. **Other Products.**—There is practically no British import from Australia of honey, beeswax, poultry, game, lard, or eggs, but frozen rabbits to the value of £395,000 were received from the Commonwealth in 1912.

§ 9. Graphical Representation of Dairy Production.

Two graphs shewing respectively the increase in dairy production and in the exports of butter will be found on page 306.

SECTION X.

FORESTS, FORESTRY, AND FORESTAL PRODUCTS.

§ 1. The Forests of Australia.

1. **Extent of Forests.**—Although no definite survey of forest lands has been made on a uniform basis for the different States of Australia, the following table gives the results of careful estimates made for each State :—

FOREST RESERVES AND FOREST AREAS, STATE AND COMMONWEALTH, 1912.

State.	Specially Reserved for Timber.	Total Forest Area.	Percentage of State Area.		Percentage of Commonwealth Area.	
			Specially Reserved.	Total Forest.	Specially Reserved.	Total Forest.
	Acres.	Acres.	%	%	%	%
New South Wales	*7,540,048	15,000,000	3.80	7.55	0.40	0.78
Victoria ...	4,160,342	11,800,000	7.57	20.98	0.22	0.62
Queensland ...	4,093,537	40,000,000	0.95	9.32	0.21	2.10
South Australia ...	161,053	3,800,000	0.07	0.66	0.01	0.20
Western Australia	12,227,612	20,400,000†	1.96	3.27	0.64	1.07
Tasmania ...	‡1,000,000	11,000,000	5.95	65.56	0.05	0.58
Commonwealth	29,182,592	102,000,000	—	—	1.53	5.35

* Inclusive of 6730 acres within the Federal area. † S.W. division only ‡ Approximate.

The actual area of wooded land is probably in all cases much greater than shewn above. For example, that of Western Australia is estimated at 97,900,000 acres; Queensland has probably 143,000,000 acres; and Victoria has a considerable extent of "Mallee" country not included in the above estimate. The basis of estimation for each State in any case cannot be regarded as quite identical. Considerable areas not included as forest lands possess timber of local value.

In each of the States areas have been set apart as State forests and "timber reserves," in some cases the reservation being made in perpetuity, in others for a definite period; in others again the reservation may be cancelled at any time.

The absolute and relative forest areas of Australia and other countries, to the latest available date, are shewn in the table on the next page.

RELATIVE AREAS OF FOREST LANDS, AUSTRALIA AND OTHER COUNTRIES.

Country.	Total Forest Area.	Percentage of Total Area.	Country.	Total Forest Area.	Percentage of Total Area.
	Sq. Miles	%		Sq. Miles.	%
Commonwealth ...	159,375	5.35	Rumania ...	10,836	21.36
New Zealand ...	26,562	25.63	Sweden ...	90,241	52.20
United Kingdom ...	4,820	3.84	Norway ...	26,685	21.50
France ...	36,005	17.58	Russia in Europe	859,375	43.04
Algeria ...	10,249	2.98	United States ...	860,000	24.08
Germany ...	54,015	25.90	Canada ...	888,000	24.64
Switzerland ...	3,290	20.60	Cape Colony ...	537	0.19
Italy ...	15,796	14.29	British India ...	126,858	11.55
Austria ...	37,700	31.66	Japan ...	28,750	16.32
Hungary ...	34,750	29.30			

2. **Distribution of Timber.**—The characteristics of the forest areas are given in some detail for each State in the Official Year Book No. 6, pp. 446-9. The more conspicuous timber regions of Australia as a whole are the eastern and southern portions, including Tasmania, and, again, the south-western portion northwards and eastwards from Cape Leeuwin. In regard to distribution, on the eastern side of the continent the largest timber is found on the crests and coastal slopes of the mountain ranges, but in the south-west, in addition to the vegetation between mountains and sea, a large area of forest stretches inland from the coastal ranges. The hills encircling Adelaide and Yorke and Eyre Peninsulas also bear good forest. The Kimberley district is timbered, and in the Northern Territory and round the shores of the Gulf of Carpentaria there are considerable forest areas. But in the interior of the continent, and in the coastal regions of West and North-West Australia, (except in the case of the districts named), and along the shores of the Great Australian Bight and Encounter Bay, there is little forest. The interior of the continent is thinly timbered.

§ 2. Forestry.

1. **Objects.**—Economic forestry, aiming at the conservation of forestal wealth by safeguarding forests against inconsiderate destruction, and by the suitable re-afforestation of denuded areas, is essential to the preservation of industries dependent upon an adequate supply of timber, and to the perpetuation of a necessary form of national wealth. Though in Australia large areas of virgin forests still remain, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable; and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest covering tends to beneficially regulate the effects of rainfall.

Successful planting of exotics in various parts of the Commonwealth has demonstrated that the Australian climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. **Forestry Departments.**—Each State of the Commonwealth, excepting Tasmania, has organised a separate forestry department or branch of service specially charged with forestal matters. Forest improvement work is carried on, areas of young forest being cleaned up by the felling and removal of stunted, diseased and suppressed growth, the

burning of debris and the making of fire breaks. Provision is made for effective patrols in forest districts, to check the ravages caused by fires, often, it is believed, caused through carelessness. The following table gives a comparative indication of the attention paid to the subject, the particulars being those for 1912:—

STATE FORESTRY DEPARTMENTS, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aus.	Tas.
Designation of officer in charge	Director of Forests	Conservator of Forests	Director of Forests	Conservator of Forests	Insp.-Gen. of Forests.	*
Salaries of persons engaged in administration and control	£ 3,542	3,385	908	1,183	1,259	500
Salaries of technical experts, forest rangers, etc.	£ 17,930	19,357†	1,315	2,180	1,320	...
Incidental expenses	£ 15,458	630	3,174	454	1,998	*
No. of persons forming office staff	21	16	4	6	6	*
No. of persons forming field staff	90	68	9	26	32	*

* Administered by Lands Department. † Including allowances.

The revenue and expenditure of the State Forestry Departments from 1908-9 to 1912-13 are given below:—

REVENUE OF STATE FORESTRY DEPARTMENTS, 1908-9 to 1912-13.

State.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
New South Wales ...	57,593	66,080	87,618	95,231	96,145
Victoria ...	40,678	37,992	43,886	45,077	51,146
Queensland ...	27,880	35,200	39,645	53,840	63,467
South Australia ...	3,416	3,089	3,756	4,849	5,609
Western Australia ...	29,484	31,549	23,985	23,456	33,805
Tasmania ...	3,871	3,840	4,366	3,800	4,414
Commonwealth ...	162,922	177,700	203,256	226,253	254,586

EXPENDITURE ON STATE FORESTRY DEPARTMENTS, 1908-9 to 1912-13.

State.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
New South Wales ...	20,169	24,510	26,695	34,408	42,154
Victoria ...	27,066	27,230	46,448	41,686	56,899
Queensland ...	4,652	5,000	8,000	2,954	5,397
South Australia ...	10,171	16,411	20,968	23,296	22,858
Western Australia ...	8,755	10,110	8,572	8,874	10,469
Tasmania ...	1,492	260	240	220	760
Commonwealth ...	72,305	83,521	110,923	111,438	138,537

* 3. **Sylvicultural Nurseries and Plantations.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451-3.) The details for 1912 are as follow:—

SYLVICULTURAL NURSERIES AND PLANTATIONS, 1912.

Particulars.	New South Wales.*	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of sylvicultural nurseries	£3,993	£11,380	nil	£19,041	£1,316	£250
No. of persons engaged in nurseries	16	32	nil	20	4	2
No. of sylvicultural nurseries ...	1	3	nil	7	1	1
Area of sylvicultural nurseries ...	128 ac.	54 ac.	nil	7 ac.	17 ac.	8 ac.
No. of forest plantations ...	7	11	1	107	2	...
Area of forest plantations ...	195 ac.	19070 ac.	310 ac.	9684 ac.	700 ac.	...
Extent of public distribution of trees or number of trees issued ...	70,000	40,000	†	280,000	68,000	5000

* A small nursery has also been established at Acton, Federal Territory.

† There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

4. Instruction in Scientific Forestry.—Forestry schools have been established in which, while general scientific instruction is imparted, special attention is paid to forestry. In the classes, theoretical forestry, botany, geology, physics, land surveying, etc., are taught; while in outside work trainees receive practical instruction in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to give the prospective forester a thorough training in all branches of the work. Courses of lectures are given at various centres, and at some of the higher technical schools, members of the forest staffs are afforded opportunities of qualifying in special subjects.

5. Forest Congresses.—An Australian Interstate Conference on Forestry was held at Sydney in November, 1911. Many of the recommendations which the conference approved have been carried out. An International Forest Congress was held at Paris in June, 1913, when Professor Percy Groom, of South Kensington Imperial College, represented the Commonwealth Government. The papers and reports dealt chiefly with the threatened shortage of timber, and the measures necessary to avert the danger.

§ 3. Commercial Uses of Principal Australian Timbers.

The uses of the more important of Australian timbers are many and various, and are indicated in previous issues of this work (see Official Year Book No. 6, pp. 454-6).

As aids in the development of Commonwealth industries, the Government is experimenting with Australian woods for rifle stocks, telephone switch boards, etc. It has also made available a sum of money for the seasoning and storing of Australian timber. Timber seasoning depôts have also been established by States Governments at the principal centres, and from these contractors may obtain timber at scheduled rates. Other timber seasoning works have been established by private enterprise.

§ 4. Forestal Industries and Production.

1. Timber.—Estimates of the quantity and value of timber cut and sawn have been prepared by the States Forestry Departments, and are as follows :—

**QUANTITIES OF LOCAL TIMBER SAWN OR HEWN IN EACH STATE OF THE
COMMONWEALTH DURING THE YEARS 1908 to 1912.**

State.	1908.	1909.	1910.	1911.	1912.
	sup. feet.	sup. feet.	sup. feet.	sup. feet.	sup. feet.
New South Wales	123,152,000	134,070,000	138,845,000	142,358,000	162,604,000
Victoria	54,692,000	50,000,000	51,000,000	53,000,000	60,000,000
Queensland	100,760,000	108,391,000	116,438,000	138,896,000	163,828,000
South Australia	436,000	240,500	210,000	217,000	183,000
Western Australia	165,766,000	171,825,000	174,528,000	191,114,000	217,696,000
Tasmania... ..	44,335,000	45,035,000	54,933,000	66,061,000	63,243,000
Commonwealth	489,051,000	509,561,500	535,954,000	591,646,000	667,554,000

2. Other Forest Produce.—No satisfactory estimates of the total value of forest production are available. Large returns are credited to firewood, but these are subject to a wide range of uncertainty.

§ 5. Oversea Trade.

1. Imports.—The quantity and value of timber imports during the four years 1909 to 1912 inclusive are shewn according to countries of origin in the following tables:—

IMPORTS OF DRESSED TIMBER, COMMONWEALTH, 1909 to 1912.

Country of Origin.	Quantity.*				Value.			
	1909.	1910.	1911.	1912.	1909	1910.	1911.	1912.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	14,003	12,012	6,350	95,938	298	409	177	1,070
New Zealand	...	2,304	6,291	77,821	...	90	36	1,107
Other British Poss.	49,598	39,489	46,375	961,085	602	633	227	8,488
Norway	41,759,024	48,465,404	59,396,352	45,796,037	258,061	338,924	446,180	341,731
Sweden	12,104,559	13,648,238	27,249,978	23,827,979	84,752	100,968	201,142	176,697
United States	1,361,253	1,747,748	1,812,295	4,299,729	15,985	21,510	23,099	37,477
Other For. Countries	541,804	231,960	399,696	22,283	4,757	4,280	3,855	417
Total	55,830,241	64,147,155	88,917,337	75,080,872	364,455	466,734	674,716	566,987

* Exclusive of timber not measured in super. feet.

**IMPORTS OF UNDRESSED TIMBER, INCLUDING LOGS, COMMONWEALTH,
1909 to 1912.**

Country of Origin.	Quantity.*				Value.			
	1909.	1910.	1911.	1912.	1909.	1910.	1911.	1912.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	54,075	65,420	97,485	311,535	902	738	1,509	3,409
Canada	16,999,515	15,585,078	25,806,393	12,271,444	74,133	68,308	110,238	54,116
India	77,674	483,635	826,240	740,059	2,613	13,604	15,373	20,847
New Zealand	69,959,470	70,604,569	85,383,540	93,524,793	458,456	416,630	571,979	654,193
Straits Settlements	231,925	295,525	313,443	544,190	1,254	1,799	1,658	2,785
Other British Poss.	111,592	75,033	267,645	59,607	1,086	909	922	550
Japan	6,990,717	7,138,554	13,218,773	11,911,714	28,590	29,127	62,552	61,900
Java	479,055	64,459	324,630	7,319	1,959	1,244	5,765	147
Norway	3,894,852	6,104,204	5,798,584	4,132,072	26,228	43,065	45,165	29,083
Russia	6,597,627	14,878,825	21,641,285	9,258,609	37,147	83,408	136,645	56,099
Sweden	4,741,846	6,506,762	6,093,004	6,986,236	44,187	44,376	40,459	50,072
United States	101,434,431	156,219,083	193,949,570	227,112,385	531,116	835,614	987,016	1,209,626
Other For. Ctries	233,204	653,617	507,182	2,074,393	2,020	3,354	4,011	18,878
Total	211,805,083	278,674,754	354,227,874	368,954,356	1,209,691	1,542,178	1,965,292	2,161,605

* Exclusive of timber not measured in super. feet.

2. **Exports.**—The quantity and value of undressed (sawn) timber exported from 1908 to 1912 are given below, the countries of destination being also shewn.

EXPORTS OF UNDRESSED TIMBER (SAWN), COMMONWEALTH, 1908 to 1912.

Country to which Exported.	Quantity.*					Value.				
	1908.	1909.	1910.	1911.	1912	1908.	1909.	1910.	1911	1912.
	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	1000 sup. ft.	£	£	£	£	£
United Kingdom...	20,760	21,689	10,879	10,436	11,325	139,223	151,724	77,003	77,070	79,940
Canada ...	1,314	492	610	546	456	13,143	5,267	7,038	6,640	5,893
S. African Union	1,104	3,768	11,687	19,243	39,544	7,234	24,712	80,223	32,094	270,282
Ceylon ...	3	2,235	303	611	576	23	14,864	1,833	4,110	4,153
Fiji ...	1,523	1,305	1,994	1,900	2,359	10,783	7,950	13,392	12,416	17,342
India ...	39,935	55,357	44,852	52,254	31,477	275,821	364,430	300,411	353,488	209,312
Mauritius ...	241	8	525	278	225	1,606	75	3,533	2,138	1,501
New Zealand ...	36,664	25,424	20,766	27,137	21,061	248,636	172,705	147,314	199,666	169,518
Ocean Island ...	974	416	268	120	446	7,914	3,236	1,605	768	3,682
Papua ...		160	357	435	614	1,146	1,366	3,497	4,223	6,410
Straits Settlements	1,838	601	52	52	81	9,943	3,877	320	380	506
Other British Pos.	4,743	4,022	2,643	103	18	30,282	29,702	19,651	774	184
Argentine Repub.	1,590	1,134	3,007	2,474	667	10,594	7,490	19,797	16,492	4,447
Belgium ...	2,515	1,820	3,535	2,887	2,727	19,613	12,154	24,870	21,665	19,193
China ...	2,373	7,263	409	2,187	1	13,370	26,595	2,693	14,250	2
Egypt ...	7,831	10,176	15,708	7,289	50	52,307	62,096	104,600	48,594	33
Germany ...	4,616	2,027	1,944	1,829	1,774	37,354	17,987	18,555	18,122	17,394
Japan ...	333	73	96	36	90	2,889	484	317	254	771
Kaiser Wilhelm L.	26	75	43	79	98	199	556	333	648	891
Marshall Islands...	460	162	229	226	140	3,770	1,325	1,643	2,023	1,366
Netherlands ...	245	35	...	3	...	1,660	256	...	26	...
Neu Pommern ...	204	311	562	372	611	1,454	2,504	4,838	3,498	6,231
New Caledonia ...	190	118	441	355	232	1,415	949	3,511	3,096	2,017
Philippine Islands	4,818	306	3,282	2,941	61	30,849	3,372	21,132	19,608	414
Port g'ese E.Africa	1,296	3,539	2,260	2,639	380	7,720	24,230	31,036	17,416	3,890
South Sea Islands (so described) ...	248	337	388	631	914	2,069	2,965	3,247	5,520	9,129
U.S. of America ...	416	659	2,301	4,907	942	3,633	7,703	12,693	25,032	11,182
Uruguay ...	9,300	3,894	6,240	1,888	1,754	62,003	25,963	41,596	12,589	11,689
Other For. Count.	334	648	4,863	2,715	778	2,642	5,164	29,674	16,948	7,685
Total ...	145,954	148,064	142,834	146,524	119,401	999,200	981,770	976,355	1,019,648	858,357

* Exclusive of timber not measured in super. feet.

QUANTITIES OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Description.	1908.	1909.	1910.	1911.	1912.
IMPORTS.					
Veneers ... Sup. feet	235,319	296,801	599,178	994,575	1,815,917
Dressed ... "	48,104,666	57,924,923	65,609,803	90,672,708	76,513,670
Undressed ... "	250,465,749	200,469,213	257,007,893	324,325,658	350,052,617
Logs ... "	16,581,812	11,335,870	21,666,861	29,902,216	18,901,739
Palings ... No.	...	...	...	...	...
Pickets ... "	1,461,726	1,226,082	2,123,398	1,523,849	2,065,145
Shingles ... "	830,960	1,270,476	690,710	937,270	1,242,720
Staves—Dressed, etc. "	62,804	4,600	600	5,440	920
Undressed ... "	1,610,571	2,390,888	3,929,063	3,363,457	2,181,121
Laths for blinds ... "	*	*	*	*	*
" other ... "	21,660,183	25,692,686	38,564,512	30,213,094	29,631,746
Spokes, rims, fellows ... "	1,595,127	659,298	835,400	1,916,045	*
Doors ... "	386	4	2	234	12,172
Architraves, mouldings, etc. ... Lin. feet	34,175	29,725	9,045	23,601	35,106
Other (Free) ...	*	*	*	*	*

* Quantity not available.

QUANTITIES OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1908.	1909.	1910.	1911.	1912.
EXPORTS.					
Veneers ...	...	...	...	...	...
Dressed ... Sup. feet	701,801	1,280,703	990,924	1,071,683	975,679
Undressed ...	145,953,614	148,063,541	142,833,520	146,262,683	119,401,434
Logs ...	3,326,259	4,254,472	2,195,219	3,252,115	1,913,973
Palings ... No.	826,900	718,550	608,602	942,220	630,670
Pickets ...	6,050	3,000	19,570	6,628	5,335
Shingles ...	47,100	12,944	100,540	35,790	21,332
Staves—Dressed, etc.	*	90	5,000	1,300	*
" Undressed	911	...	1,267	...	...
Laths for blinds	*	*	*	*	*
" other	1,056,781	14,240	677,280	110,900	406,980
Spokes, rims, felloes	*	*	*	*	*
Doors ...	*	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	46,848	90,458	94,054	92,162	125,327
Other ...	...	...	...	...	...

EXCESS OF IMPORTS OVER EXPORTS.

Veneers ...	235,319	296,801	599,178	994,575	1,815,917
Dressed ... Sup. feet	47,402,865	56,644,220	64,618,879	89,601,025	75,537,991
Undressed ...	104,512,135	52,405,672	114,174,373	178,062,975	230,651,183
Logs ...	13,255,553	7,081,398	19,471,642	26,650,101	16,987,766
Palings ... No.	—826,900	—718,550	—608,602	—942,220	—630,670
Pickets ...	1,455,676	1,223,082	2,104,428	1,517,221	2,059,810
Shingles ...	783,860	1,257,532	590,170	901,480	1,221,388
Staves—Dressed, etc.	*	4,510	—4,400	4,140	920
" Undressed	1,609,660	2,390,798	3,927,796	3,363,457	2,181,121
Laths for blinds	*	*	*	*	*
" other	20,603,402	25,678,446	37,897,232	30,102,194	29,224,766
Spokes, rims, felloes	*	*	*	*	*
Doors ...	*	*	*	*	*
Architraves, mouldings, etc. ... Lin. feet	—12,925	—60,733	—85,009	—68,561	—90,221
Other ...	*	*	*	*	*

* Quantity not available.

Note. — signifies excess of exports over imports.

VALUE OF TIMBER IMPORTED INTO AND EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Description.	1908.	1909.	1910.	1911.	1912.
IMPORTS.					
Veneers ...	£ 8,289	£ 8,778	£ 14,814	£ 25,795	£ 42,379
Dressed ...	324,997	376,732	478,162	683,430	578,427
Undressed ...	1,388,224	1,158,445	1,432,301	1,819,832	2,061,666
Logs ...	77,361	51,246	109,877	165,460	99,939
Palings ...	...	...	...	...	...
Pickets ...	6,174	4,117	8,804	5,622	10,270
Shingles ...	913	1,873	851	1,280	1,892
Staves—Dressed, etc.	1,173	342	145	131	14
" Undressed	14,215	18,178	24,542	20,417	15,744
Laths for blinds	44	83	24	38	26
" other	16,547	20,970	28,397	23,181	26,436
Spokes, rims, felloes	35,976	12,408	17,297	40,047	21,616
Doors ...	251	1	1	137	3,616
Architraves, mouldings, etc.	156	59	29	65	145
Other (Free) ...	20,271	588	136	129	1,043
Total value	1,894,591	1,653,820	2,115,380	2,785,564	2,863,213

VALUE OF TIMBER IMPORTED AND EXPORTED, ETC.—Continued.

Description.	1908.	1909.	1910.	1911.	1912.
EXPORTS.					
	£	£	£	£	£
Veneers	...	...	...	...	...
Dressed	7,488	12,104	11,396	12,599	11,542
Undressed	999,200	981,770	976,355	1,016,510	858,357
Logs	18,611	23,690	16,768	23,024	14,950
Palings	4,227	3,449	3,106	4,931	3,734
Pickets	52	26	176	84	66
Shingles	125	29	210	91	106
Staves—Dressed, etc. ...	111	1	52	16	...
Undressed	17	...	68	...	...
Laths for blinds	1,073	1,179	1,136	946	363
„ Other	1,139	20	708	105	495
Spokes, rims, felloes ...	6,131	5,191	8,687	9,989	12,214
Doors	732	991	759	743	1,053
Architraves, mouldings, etc. ...	258	511	623	589	723
Other	...	...	...	...	...
Total value ...	1,039,114	1,028,961	1,020,044	1,069,627	903,603

EXCESS OF IMPORTS OVER EXPORTS.

Veneers	8,289	8,778	14,814	25,795	42,379
Dressed	317,559	364,628	466,766	670,831	566,885
Undressed	389,024	176,675	455,946	808,322	1,203,309
Logs	58,750	27,556	93,109	142,436	84,989
Palings	—4,227	—3,449	—3,106	—4,931	—3,734
Pickets	6,122	4,091	8,628	5,538	10,204
Shingles	788	1,844	641	1,189	1,786
Staves—Dressed, etc. ...	1,062	341	93	115	14
Undressed	14,198	18,178	24,474	20,417	15,744
Laths for blinds	—1,029	—1,096	—1,112	—908	—837
„ other	15,408	20,950	27,689	23,076	25,941
Spokes, rims, felloes ...	29,845	7,217	8,610	30,058	9,402
Doors	—481	—990	—758	—606	2,563
Architraves, mouldings, etc. ...	—102	—452	—594	—524	—578
Other	20,271	588	136	129	1,043
Total value ...	855,477	624,859	1,095,336	1,715,937	1,959,610

Note. — signifies excess of exports over imports.

The exports of sandalwood were:—

EXPORTS OF SANDALWOOD, 1908 to 1912.

Country to which Exported.	Quantity.					Value.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
Hong Kong	158,444	54,387	141,646	120,432	22,854	65,037	25,546	71,672	62,566	11,567
Straits Settlements	1,484	12,890	7,378	13,783	2,390	580	5,036	3,319	5,967	1,034
Other British Possessions ...	14,680	5,163	15,223	5,687	7,863	5,604	2,358	6,301	2,506	3,455
China	17,560	31,649	19,399	7,140	36,755	6,238	12,180	7,332	2,348	16,619
Other Foreign Countries ...	...	...	...	6	233	...	...	...	9	225
Total	192,168	104,089	183,646	147,048	70,095	77,468	45,120	88,624	73,396	32,900

Tanning bark is largely exported from the Commonwealth, as the following table shews:—

EXPORTS OF TANNING BARK, 1908 to 1912.

Country to which Exported.	Quantity.					Value.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ...	5,878	19,424	12,159	3,154	605	1,782	8,188	4,674	1,195	197
New Zealand ...	72,933	69,137	55,838	66,574	73,667	31,637	31,414	25,036	29,105	34,224
Other British Poss. ...	1,655	1,745	1,865	1,868	1,684	793	902	860	921	802
Belgium ...	25,154	15,910	40,556	29,100	40,180	9,432	5,966	15,815	11,576	15,520
France ...	328	206	837	204	...	167	105	319	101	...
Germany ...	142,382	114,128	179,119	148,490	49,849	53,329	43,063	70,442	60,121	20,630
Other For. Countries ...	12,034	5,322	5,239	4,166	2,060	5,270	2,307	2,108	1,627	755
Total ...	260,364	225,872	295,616	253,556	168,045	102,410	91,945	119,254	104,646	72,128

QUANTITIES AND VALUES OF BARK IMPORTED INTO, AND EXPORTED FROM THE COMMONWEALTH, 1908 to 1912.

Particulars.					1908.	1909.	1910.	1911.	1912.
QUANTITIES—					cwt.	cwt.	cwt.	cwt.	cwt.
Imports ...	...	...	...	...	38,711	28,020	12,648	72,447	119,253
Exports ...	...	...	...	...	260,364	225,872	295,616	253,556	168,045
Excess of exports over imports	...	...	...	...	221,653	197,852	282,968	181,109	48,792
VALUES—					£	£	£	£	£
Imports ...	...	...	...	...	16,289	12,774	5,461	31,253	50,920
Exports ...	...	...	...	...	102,410	91,945	119,254	104,646	72,128
Excess of exports over imports	...	...	...	...	86,121	79,171	113,793	73,393	21,208

SECTION XI.

FISHERIES AND PISCICULTURE.

§ 1. Commercial Fisheries.

1. **Fish Stocks.**—Australasia possesses an abundant and varied fish fauna, which embraces both tropical and temperate varieties and includes destructive as well as edible species. In rivers and lakes both indigenous and imported varieties thrive. The latter have been introduced and acclimatised for industrial and sporting purposes by Governments and angling societies. Exploitation of the fishing areas—for some classes of fish for the whole year, for others during the breeding season only, or until a certain size is attained—is, where necessary, expressly forbidden; proclaimed localities are closed against net-fishing, and a minimum size of mesh for nets is sometimes fixed. The sea-fishermen in some districts have made regulations in their own interests for the purpose of controlling the market supply, and these they rigorously observe.

2. **Economic Fisheries.**—Although Australia's food fishes are abundant, the development of the industry has been slow. It has been authoritatively stated that the marine fisheries, properly fostered, will develop into an industry of national importance. Local catches of lake and river fishes furnish, in the aggregate, a not inconsiderable amount of food supply.

3. **Distribution of Supplies.**—Present methods of distribution impose serious difficulties on the development of fishing generally, since there is a wide divergence between the price paid by the consumer and the return received by the producer. States and municipalities are interesting themselves in the direction of more economic distribution. Good markets are assured in the chief cities for regular deliveries of fresh fish.

4. **Oyster Fisheries.**—Natural oyster beds, whose ample product is of excellent quality, exist on the foreshores in the shallow waters of inlets and estuaries in several parts of Australia. By husbanding the natural crop, and by judicious transplanting, the oyster output has been very materially augmented, and it is believed that there is a great future for the industry. The areas are leased by the Government to private persons, lengths of foreshore being taken up and profitably exploited. In New South Wales and Queensland particularly, the industry has developed; and small yields have been obtained in South Australia and Victoria.

5. **Pearl-shelling.**—Pearl-shelling is carried on in the tropical districts of Queensland, the Northern Territory, and Western Australia. The pearl oyster inhabits the northern and western coasts from Cape York to Shark Bay, a length of shore of over 2000 miles. The shells are marketed in considerable quantities, and pearls are also obtained in Queensland and Western Australia. The fishing is generally conducted with the aid of diving apparatus, in water varying from four to twenty fathoms in depth.

In Queensland and Northern Territory the bêche-de-mer industry is carried on, and tortoiseshell is obtained on the coasts. Experiments have been made in cultivating the pearl oyster on suitable banks. In October, 1911, a pearl weighing 178 grains, and valued at £3000, was obtained at Broome. Further details regarding pearl-shelling are given in Official Year Book, No. 6, p. 463.

The system of licensing boats and men engaged in the pearling industry restricts, in the States where it is in force, indiscriminate exploiting of the areas, and returns a small revenue.

Poaching in Australian territorial waters has long been rife, particularly on the north-west coast, and measures have recently been taken to check it.

In accordance with the "White Australia" policy, it has been determined that the employment of coloured labour in the pearl-shelling industry shall be restricted, and ultimately cease altogether. After 31st December, 1913, permits to indent Asiatics for the pearling fleet cease, and all divers and tenders employed upon the luggers must be white men. Experienced divers from England have been engaged. It is believed that practical difficulties which may arise in the transition period will be overcome. In March, 1912, the Commonwealth Government appointed a Royal Commission to inquire into the pearling industry generally, and particularly as regards its labour problems. The Commission commenced its work at Cairns, Queensland, on 30th April, 1912. Evidence of a valuable nature has been taken in various centres; a progress report was presented in October, 1913; and minutes of evidence, appendices, etc., were published in December, 1913.

§ 2. Fisheries Statistics.

1. **Estimates for the Commonwealth.**—The returns given below have been furnished by the State departments. Estimates and approximations, where shewn, are official. The data do not generally lend themselves to presentation on a uniform scheme, but the principal facts have been compiled as far as possible for the Commonwealth.

GENERAL FISHERIES (EXCLUDING EDIBLE OYSTERS, PEARLSHELL AND BÊCHE-DE-MER), COMMONWEALTH, 1912.

State.	No. of Boats Engaged.	Value of Boats and Equip- ment.	No. of Men Em- ployed.	Total Take of		Value of Take.	
				Fish.	Lobsters.	Fish.	Lobsters.
	No.	£	No.	cwt.	doz.	£	£
New South Wales ...	615	26,047	2,405	134,182	11,325	144,319	5,096
Victoria ...	721	46,034	1,133	88,850	39,460	77,899	11,749
Queensland...	311	11,106	574	37,570	...	36,628	...
South Australia ...	881	30,500	1,194	98,000	11,750	165,000	5,500
Western Australia ...	271	19,794	569	32,000	15,000	60,000	4,260
Tasmania† ...	†95	*	†220	†	8,233	12,817	1,235
Northern Territory ...	4	600	14	566	...	682	...
Commonwealth ...	2,898	134,081§	6,114	391,168§	85,768	497,345	27,840

* Figures not available. † Estimated. ‡ 73,869 dozen. § Exclusive of Tasmania.

EDIBLE OYSTER-FISHERIES, COMMONWEALTH, 1912.

State.	Number of Boats Engaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Number of Leases.	Length of Foreshore in Leases.	Oysters Taken.	
						Quantity.	Value.
	No.	£	No.	No.	Miles.	cwt.	£
New South Wales ...	364	10,776	348	2,010	339	25,955	45,108
Victoria ...	...	...	...	...	...	...	...
Queensland...	115	12,760	161	769	*	28,935	32,371
South Australia ...	6	640	9	*	...	3,223	2,454
Western Australia ...	...	...	...	...	...	...	...
Tasmania ...	...	...	...	...	...	...	...
Northern Territory ...	...	...	...	...	...	...	...
Commonwealth ...	485	24,176	518	2,779†	*	58,113	79,933

* Figures not available.

† Exclusive of figures for South Australia.

PEARL, PEARLSHELL, AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH, 1912.

State.	Number of Boats En-gaged.	Value of Boats and Equip-ment.	Number of Men Em-ployed.	Quantity of Pearlshell obtained.	Value of Pearlshell obtained.	Value of Pearls ob-tained.	Value of Bêche-de-mer obtained.	Quantity of Tor-toiseshell ob-tained.	Value of Tor-toiseshell ob-tained.
	No.	£	No.	Tons.	£	£	£	Ibs.	£
N.S.W. ...	...	...	...	...	...	...	...	...	...
Victoria ...	...	...	...	...	...	...	...	...	...
Q'sland ...	170	55,000	1,357	462	92,576	*6,333	23,335	1,302	785
S. Aust. ...	...	...	...	...	...	...	...	...	...
W. Aust. ...	401	186,924	2,718	1,596	421,609	100,000	...	...	...
Tas. ...	...	...	...	...	...	...	...	...	...
N. Terr. ...	36	8,650	216	45	16,113	40	1,757	...	...
C'wlth.	607	250,574	4,291	2,103	530,298	106,373	25,142	1,302	785

* Exclusive of pearls obtained by Japanese divers, for which no record is obtained; estimated at about £25,000.

PUBLIC REVENUE FROM FISHERIES, COMMONWEALTH, 1912.

State.	Licenses.	Leases.	Fines and Forfeitures.	Other Sources.	Total.
	£	£	£	£	£
New South Wales ...	1,116	5,766	320	604	7,806
Victoria ...	...	...	...	...	...
Queensland...	2,320	4,752	6	10	7,088
South Australia ...	412	...	7	...	419
Western Australia ...	1,126	1,150	152	11	2,439
Tasmania* ...	556	...	10	...	566
Northern Territory ...	46	...	...	...	46
Commonwealth ...	5,576	11,668	495	625	18,364

* Returns incomplete; refer mainly to Fisheries Board of Hobart.

GENERAL AND OYSTER FISHERIES, COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912
General Fisheries—					
No. of boats engaged ...	3,063	3,101	3,088	2,593	2,898
„ men employed ...	5,107	5,492	5,515	4,405	6,114
Fish obtained—					
Quantity ... cwt.	289,820	298,351	341,659†	350,828§	391,168 ¹¹
Value... .. £	259,392	276,672	381,182	474,027	497,345
Lobsters obtained—Value, £	16,163	16,078	22,172	27,718	27,840
Edible Oyster Fisheries—					
No. of boats engaged* ...	139	139	113	482	485
„ men employed* ...	196	175	174	589	518
Oysters obtained—					
Quantity ... cwt.	57,590	59,109†	59,854	64,397	58,113
Value £	61,900	63,192†	60,769	77,080	79,933
Public Revenue from Fisheries					
Licenses £	8,891	8,812	5,496	4,833	5,576
Leases £	7,001	7,446	9,842	11,583	11,668
Fines and forfeitures	168	142	180	345	495
Other sources £	885	649	742	386	625
Total revenue £	16,945	17,049	16,260	17,147	18,364

* Queensland and South Australia only for years 1907 to 1910. There are practically no oyster fisheries in Victoria, Western Australia, and Tasmania. † New South Wales and Queensland only. ‡ Exclusive of Tasmania. § Exclusive of Western Australia and Tasmania. ¹¹ Exclusive of Tasmania.

PEARL, PEARL-SHELL AND BÊCHE-DE-MER FISHERIES, COMMONWEALTH,*
1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
No. of boats engaged ...	604	567	586	578	607
No. of men employed ...	3,852	3,883	4,038	4,052	4,291
Pearlshell obtained—					
Quantity ... tons	1,768	1,770	1,853	1,717	2,103
Value £	219,098	270,256	299,143	327,444	530,298
Pearls obtained †—					
Value £	49,225	77,788	94,768	87,713	106,373‡
Bêche-de-mer obtained—					
Quantity ... tons	346	352	351	323	450
Value £	22,903	16,410	14,088	17,712	25,142
Tortoiseshell obtained—					
Quantity ... lbs.	5,056	3,532	2,070	1,056	1,302
Value £	2,776	1,739	998	572	785

* Queensland, Northern Territory and Western Australia only. There is no production in the other States. † As returned. ‡ Exclusive of pearls obtained by Japanese divers, estimated at £25,000.

§ 3. Oversea Trade in Fish.

That the development of the fishing industry in Australia leaves much to be desired is evident from the fact that the import of preserved fish into the Commonwealth is very large. The figures for the trade are as follows:—

IMPORTS OF FISH, COMMONWEALTH, 1908 to 1912.

Classification.		1908.	1909.	1910.	1911.	1912.
Fresh (oysters) ...	{ cwt.	9,702	10,580	9,640	7,152	8,765
	{ £	4,381	4,989	4,805	3,462	5,279
Fresh, or preserved by cold process...	{ cwt.	19,311	11,355	11,248	20,455	25,673
	{ £	48,072	20,785	23,001	44,536	56,396
Potted ...	{ cwt.	*	*	*	*	*
	{ £	20,874	22,082	25,408	26,024	35,506
Preserved in tins ...	{ cwt.	144,750	137,860	154,547	148,846	194,092
	{ £	400,981	371,620	466,381	443,049	606,969
Smoked, dried and n.e.i.	{ cwt.	19,349	21,667	19,448	21,605	26,472
	{ £	34,780	47,096	42,918	52,289	76,327
Total ...	{ cwt.†	193,112	181,462	194,883	198,058	255,002
	{ £	509,088	466,572	562,513	569,360	780,477

* Not available. † Exclusive of potted fish.

EXPORTS OF FISH (AUSTRALIAN PRODUCE), 1908 to 1912.

COMMONWEALTH.

Classification.		1908.	1909.	1910.	1911.	1912.
Fish, fresh, smoked, or preserved by cold process	{ cwt.	394	994	912	248	137
	{ £	1,230	2,896	1,963	1,026	436
Preserved in tins, dried, salted, etc.	{ cwt.	7,006	6,746	5,346	6,891	38,268
	{ £	23,299	15,556	17,532	23,185	35,827
Total ...	{ cwt.	7,400	7,740	6,258	7,139	38,405
	{ £	24,529	18,452	19,495	24,211	36,263

Although a considerable development has taken place lately in the fish preserving industry, there is for the Commonwealth an excess of imports over exports amounting approximately to £485,000 in 1908, £450,000 in 1909, £540,000 in 1910, £545,000 in 1911, and £745,000 in 1912.

The exports of pearlshell and tortoiseshell are given hereunder for the five years 1908-12 :—

EXPORTS OF PEARLSHELL AND TORTOISESHELL, 1908 to 1912.

COMMONWEALTH.

Article.		1908.	1909.	1910.	1911.	1912.
Pearlshell ...	{ cwt.	40,748	34,585	40,307	39,126	64,976
	{ £	250,904	250,291	322,184	330,003	524,281
Tortoiseshell ...	{ lbs.	5,310	3,207	1,742	1,693	5,170
	{ £	2,783	1,557	823	964	3,454

§ 4. Development of the Fishing Industry.

1. Transport and Marketing.—For many years the question of securing to the consumer a regular supply of wholesome fish at a moderate price has been under consideration. Where quick transport by rail or steamer is not provided, the catch of fish in tropical or sub-tropical waters can only be locally consumed, since speedy marketing is essential. Adequate refrigerating apparatus on railway waggons and coasting steamers and quick transport to centres of population might, however, alter the economic condition in a satisfactory direction. In the temperate regions there are adequate supplies close to the principal ports—a fact which is of considerable advantage, since short trips mean marketing of the produce in good condition, and less sea risks are incurred. At the present time the natural wealth of Australia in fish is exploited only to a very slight extent.

2. Experiment and Culture.—*The Existing Fisheries.* In many respects the fishing industry is capable of modification and development. A good deal has been effected by the State Governments in the way of experiment and culture. A uniform policy of development for Australia is desirable, and recommendations have been made that the Fisheries Departments of the various States should co-operate with the Federal Government with a view to increasing the productiveness of the Commonwealth waters; and that uniform fisheries laws should be adopted by adjacent States.

All live fish arriving in Australia are examined on shipboard in order to prevent the importation of undesirable fish.

With the object of ascertaining something of the movements of oceanic fishes, as well as of those estuarine fishes which make periodical oceanic migrations, reports are furnished regarding the various kinds of fishes, etc., observed travelling along the coast, as well as the quantity and size of fish seen. Some very useful information has in this way been obtained.

Fuller details regarding the activities of the States in fish-culture are given in Official Year Book No. 6, pp. 471–2.

By arrangement with the Commonwealth Fisheries Department, members of the staff of the Australian Museum, Sydney, accompany the F.I.S. "*Endeavour*" on various cruises. Specimens are collected, mounted for scientific purposes, and distributed to other Australian Museums, a considerable number being put aside for the Commonwealth Fishery Museum.

§ 5. The Commonwealth Department of Fisheries.

1. The Federal Council of Australasia.—The Federal Council had power to legislate with regard to fisheries in Australasian waters beyond territorial limits. In its second session (opened 16th January, 1888), an Act was passed to regulate pearlshell and bêche-de-mer fisheries in Australasian waters adjacent to Queensland; and in the third session, opened shortly afterwards, the Act was made applicable to Western Australia. Upon the passing of the Commonwealth Constitution Act of 1900, however, the Federal Council ceased to exist.

2. Commonwealth Investigations.—In 1907 the Commonwealth Government decided to demonstrate what might be attained commercially by the application of modern methods and experiences. A Federal Investigation Ship, the *Endeavour*, was constructed specially for the work, and a Director of Fisheries was appointed. Cruises and experiments were immediately instituted. These shew that the Commonwealth possesses an asset of considerable value in her sea fisheries. The scope and results of the inquiries are set out in the Director's reports, and are summarised below.

3. Scope of the Inquiry.—The immediate scope laid down for the investigation was, shortly, as follows:—

- (i.) By various means of capture to ascertain what marketable food-fishes may be found in ocean waters adjacent to Australia.
- (ii.) In what quantity they may be taken.
- (iii.) To what extent they migrate, and where.
- (iv.) How they may be conveniently and economically captured.
- (v.) By systematic survey to find out and chart suitable fishing grounds.

In addition to the work which is being thus carried on in the various recognised methods of capture (including long-line and drift-net fishing, etc.), survey, hydrographic work, etc., is conducted, for the purpose of ascertaining the nature of the bottom, depth of water, currents, and sea temperature.

4. **The F.I.S. "Endeavour."**—The construction of the investigation vessel was undertaken in the Commonwealth, and was upon the lines shewn by the most recent European experience to be of greatest advantage, with necessary modifications to suit the Australian climate. A description of the vessel, which was the first Commonwealth owned sea-going ship, is given in Official Year Book No. 6, p. 473. Up to the end of 1913, 85 cruises had been made in eastern and southern waters.

5. **Results.**—The object of the investigations is to shew how and where food-fish may be obtained in quantity, rather than to bring large catches into port. Moreover, in untested areas, sounding and survey work generally become a main feature. Experiments with drift nets and long lines have given promising results. Trawling has been the principal method tried. By this means the fish are disturbed by a large bag-shaped net drawn along the sea bottom, and they are caught and retained in a trap arrangement at the tail-end of the net. Prior to 1912 the trials were limited to waters of not more than 100 fathoms in depth. During 1912 and 1913 the work was, in several localities, extended to a depth of 250 fathoms, and shewed that excellent catches could be obtained. In many cases, the greater size and superior quality of the catches obtained in deep waters made the freights, commercially, much more valuable than those obtained in shallow areas. A typical instance is the rockling, which in coastal waters is uncommon and small, but abundant at depths between 150 and 200 fathoms, and with an average weight of nearly ten pounds. The cruises have shewn that both suitable and unsuitable trawling grounds were met with in all parts, and that not all suitable grounds are rich in fish life. The richest grounds were found in localities where a reversal of currents or eddies facilitates the accumulation of fish food. Good catches are nearly always obtained along the "edge of the bank" at a depth varying from 50 to 120 fathoms. The "Endeavour" has so far located approximately 10,000 square miles of trawlable ground carrying fish in paying quantities, and within reasonable distance of the principal cities. The results have attracted a considerable amount of attention, particularly in Great Britain.

In conjunction with the survey work, investigations were undertaken regarding the deep water currents and their relation to the abundance of fish food and migrations. Bottom samples have been obtained from various depths down to 1200 fathoms, and water samples and temperatures from intermediate depths. Plankton collections from the surface have also been obtained, particularly to ascertain the distribution of pelagic fish eggs.

A varied and scientifically interesting collection of rare fishes, invertebrates, etc., has also been obtained. The specimens have been classified and mounted by naturalists in various parts of the Commonwealth.

Reports on the hydrographic, survey, and scientific departments of the vessel's activity are being prepared. At the end of 1911, part I. of the zoological results of the fishing experiments of the *Endeavour* was published; parts II. and III. followed in 1912. In 1914, a second volume was begun. These embody reports on the fishes, mollusca, sponges and hydroids obtained during the cruises. A number of new species has been discovered, and scientifically examined.

6. Treatment and Disposal of the Catch.—It was decided that the wisest method of disposing of the fish was to distribute them to recognised charitable institutions. Clashing with the established industry was thus avoided, and upwards of one hundred charities have benefited.

Upon capture, the prompt gutting and washing of the fish is performed. The necessary records are taken regarding the number, size, food, etc. They are then dried, and stowed in the cool chamber.

Unmarketable fish constitute a considerable proportion of the catch. Experience elsewhere has shewn that fish for which there is no sale for consumption, have a considerable value as material for rich fertilisers, and for the extraction of oil. For both these by-products there is a good overseas market.

The inadequacy of the present supply of fish in Australia is universally admitted, yet all reports agree that there is, on the coast, a bountiful supply of fish. It is not, as in Great Britain and the northern countries of Europe, a popular article of diet, but is rather in the nature of a luxury. While the value of fish consumed in Norway is nearly 20s., and in Holland, Denmark, and the United Kingdom 5s. per head of population, in Australia it is little over 1s. 6d. Moreover, in the European countries named, notwithstanding the fact that the trawlers have generally to go much further afield for their catches, a shilling's worth of fish represents a much larger quantity than could be obtained for the same amount in the Commonwealth, where the wealth of the coastal waters indicates that, with satisfactory handling, the product of the sea would become an article of food for the poorest classes, and a valuable industry would be developed. The uncertainties and limitations of the market, caused by the irregularity of the supply, will be overcome when the fact is recognised that the ocean product, properly exploited, is adequate to supply the demand, however strong. Under present conditions, it is not surprising that Australians are not great fish-eaters. The quantity of fish consumed annually per head in Great Britain is 42 lbs.; in Australia it is only 9 lbs. As a result of the *Endeavour's* experiments, definite steps are being taken to carry out well-considered schemes, which it is hoped will awaken enterprise, and revolutionise the unsatisfactory conditions of the Australian fish trade.

§ 6. Fish Preserving.

Bounties have been provided by the Federal Government for fish preserving, the rate payable being $\frac{1}{2}$ d. per lb. The amounts paid were £27 in 1907-8; £1727 in 1908-9; £311 in 1909-10; £115 in 1910-11; £168 in 1911-12; and £103 in 1912-13. An amount is available for 1913-14. It is anticipated that the bounties, together with the increased yield that may be expected to result from the fisheries investigations now being conducted, will lead to a considerable output and consumption of locally preserved fish. The abundance of fish in Australian waters offers excellent opportunities for the institution of preserving establishments, particularly in those coastal districts which enjoy a temperate climate. Up to the present but little development has taken place, and the establishments for fish preserving at the present time are very few.

NUMBER OF FISH-PRESERVING ESTABLISHMENTS IN COMMONWEALTH, 1908 to 1912.

State:	1908.	1909.	1910.	1911.	1912.
New South Wales	1	1	...	1	1
Victoria	...	...	1	1	1
Queensland	3	2	...	3	1
South Australia	...	...	...	...	...
Western Australia	3	3	3	...	...
Tasmania	...	...	...	...	...
Northern Territory	2	2	2	2	2
Commonwealth	9	8	6	7	5

SECTION XII.

MINES AND MINING.

§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood. Prior to 1851, the year when Hargraves' memorable discovery was made, coal and copper had both been mined to some extent, and the existence of deposits of other minerals, including gold, had been proved. But it was the news of the sensational finds of the precious metal in 1851 and the year immediately following that brought about a constant stream of immigration, and caused an increase in population from 221,000 at the end of 1841 to upwards of 1,168,000 at the end of 1861.

2. **Extent of Mineral Wealth.**—The large production of gold, silver, copper, and tin, the extent of the coal deposits, the presence of large quantities of iron ore, and the great variety of minerals found in appreciable quantities, suggest that the future history of mining will, in all probability, be even more remarkable than that of the past. For the extent of the total mineral wealth of Australia cannot yet be regarded as well ascertained, since the mineral exploration of the country is, after all, still in its infancy. The presence of considerable deposits of valuable minerals has long been known. Thus, coal was discovered in 1797, and a shipload was exported to Bengal in 1799; silver was discovered by Count Strzelecki as early as 1839, and was worked as early as 1864; copper mining dates back to 1844; lead to about 1848; iron to about 1850; while the discovery of gold in payable quantities dates back to 1851. Cobalt, nickel, manganese, chromium, tungsten, molybdenum, mercury, antimony, bismuth, zinc, radio-active ores, etc., have all been found, some in fairly large quantities.*

Among the more valuable non-metalliferous substances may be mentioned coke, kerosene shale, graphite, alunite, asbestos, diatomaceous earth, clays, ochres, etc.; in building stones, sandstones, syenites, granites, basalts, augite-andesite, porphyries, serpentines, slates, limestones, and marbles; in precious stones, diamonds, emeralds, rubies, sapphires, amethysts, precious opal, turquoise, topazes, garnets, chrysolites, cairngorm, agates, etc. In general it may be said that the variety of Australian mineral wealth is very great.

3. **Value of Production during 1912.**—Compared with the returns for 1911 the total mineral production of the Commonwealth shews an increase in 1912 of over £2,149,000. The largest advance is exhibited in the figures for New South Wales, where the total was over £1,821,000 in excess of that for the preceding year. In Queensland the increase amounted to £518,617. South Australia and Tasmania also shewed increases amounting to £147,000 and £144,000 respectively. The improvement in the States mentioned was, however, counterbalanced by more or less heavy decreases in the remaining States, the return for Western Australia shewing a falling-off amounting to about £346,000, while there was a decline in the Victorian yield to the extent of £133,000. In Victoria the decline is attributed to the falling-off in the gold yield, due to diminished returns from the lode mines at Ballarat, Scarsdale and Berringa, and the deep alluvial workings at Rutherglen and Ararat. In Western Australia, the gold yield shewed a falling-off of £375,000, through diminished returns, principally from the Mt. Margaret fields.

The decline in the gold yield for the Commonwealth amounted to about £672,000, South Australia and Tasmania alone shewing an increased output over the total for the preceding year.

The comparative value of the production of minerals raised in each State during 1912 is given in the following table:—

COMMONWEALTH MINERAL PRODUCTION IN 1912.

Minerals.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
Alunite ...	13,700	...	...	...	...	...	...	13,700
Antimony ...	355	16,162	...	...	...	...	...	16,517
Asbestos ...	...	...	...	...	...	...	...	...
Bismuth ...	1,210	...	19,261	...	...	2,646	...	23,117
Coal ...	3,660,015	259,321	338,264	...	135,857	24,568	...	4,418,025
Coke ...	162,494	...	...	...	...	...	...	162,454
Copper ...	579,791	...	1,698,280	461,500	60,537	440,444	3,968	3,244,550
Diamonds ...	2,001	20	...	...	...	...	...	2,021
Diatomaceous earth	132	3,400	...	...	...	...	...	3,532
Gems (unspecified)...	...	...	40,016	...	...	...	...	40,016
Gold ...	702,129	2,039,464	1,477,979	28,000	5,448,385	161,300	22,671	9,879,928
Gypsum ...	...	3,359	...	9,000	...	...	...	12,359
Iron ...	130,708	...	...	...	...	...	...	130,708
Iron oxide ...	4,763	...	...	...	...	...	...	4,763
Ironstone flux ...	761	...	9,035	26,375	...	...	...	36,171
Kaolin ...	185	342	...	...	...	...	...	527
Lead (pig, etc.) ...	294,530	...	55,667	...	22,565	...	...	342,762
Limestone flux ...	11,066	...	24,176	12,500	...	...	...	47,742
Manganese ...	...	60	1,281	...	4	...	...	1,345
Molybdenite ...	3,706	...	17,349	...	...	...	...	21,055
Opal ...	35,008	...	3,000	...	...	...	...	38,008
Platinum ...	3,880	...	...	...	...	...	...	3,880
Salt ...	...	...	...	40,187	...	...	...	40,187
Scheelite ...	4,963	...	...	...	...	...	...	4,963
Shale ...	34,770	...	...	...	...	...	...	34,770
Silver ...	251,652	2,200	66,188	326	16,353	...	...	336,719
Silver-lead bullion	3,229,614	...	...	...	...	309,098	820	3,539,532
Silver-lead ore		...	...	...	...	...	...	
Tin ...	338,074	5,733	364,503	...	70,578	543,103	27,001	1,348,992
Wolfram... ..	16,584	574	57,821	20	...	6,601	3,330	84,930
Zinc ...	1,766,242	...	...	...	217	...	...	1,766,459
Unenumerated ...	8,309	659	2,535	6,550	5,711	*5,742	...	29,506
Total ...	11,226,602	2,331,294	4,175,355	584,458	5,760,207	1,493,502	57,820	25,629,238

* Osmiridium.

It may be pointed out in connection with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In some instances, moreover, the published information is of little value. Thus, the New South Wales Mines Report supplies the value of exports only in connection with building stone, and it is obvious that such figures are of little value as regards production, while the Victorian figures are incomplete. It has therefore been considered advisable to discard both totals. By restricting the comparison to items in connection with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1912 consist of—lime, £44,478; marble, £1340; Portland cement, £368,280; building stone, £559; and grindstones, £176. The South Australian figures are exclusive of—chalk, £600, and flint pebbles, £420.

4. **Total Production to end of 1912.**—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1912. The figures given in this table are also exclusive of the same items referred to in connection with the preceding table. Thus the total for New South Wales falls short by £2,146,000 of that published by the State Department of Mines, the principal items excluded being cement, £1,839,700, lime £278,000, and building stone, £21,176.

COMMONWEALTH MINERAL PRODUCTION TO END OF 1912.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	North'm Territ'y.	C'wealth.
	£	£	£	£	£	£	£	£
Gold	59,462,975	291,703,453	75,217,830	920,810	109,298,871	7,407,282	2,065,688	546,076,909
Silver	...	...	...	...	...	...	...	...
Lead	60,221,900	219,935	2,245,656	338,854	708,961	6,258,748	74,819	70,068,893
Copper	11,784,102	215,761	10,948,390	27,746,552	1,113,065	10,256,981	329,406	62,394,266
Tin	9,327,609	782,680	8,110,704	...	1,054,125	11,972,602	328,898	31,576,618
Coal	69,087,688	2,462,390	5,377,235	...	1,069,435	572,963	...	78,569,711
Other	17,488,353	409,147	2,001,649	1,420,413	85,005	201,203	43,962	21,649,732
Total	227,372,627	295,793,366	103,901,473	30,426,629	113,329,482	36,669,779	2,842,773	810,336,129

The "other" minerals in New South Wales include antimony, £305,224; bismuth; £128,537; chrome, £101,468; coke, £2,138,667; diamonds, £120,408; iron, £2,113,786; opal, £1,330,207; oil shale, £2,322,831; wolfram, £132,517; and zinc, £7,539,913. In the Victorian returns antimony ore was responsible for £224,712. Included in "other" in the Queensland production were opal, £172,195; gems, other, £226,202; bismuth and wolfram, £846,674; antimony ore, £50,953; manganese, £64,709; limestone flux, £279,398; and ironstone flux, £202,776. The chief item in South Australian "other" minerals was salt, £815,381. In the Tasmanian returns limestone flux was responsible for nearly £100,000, and iron ore for about £26,000.

It will be convenient in the succeeding pages to deal first with gold and the various metals, then with non-metallic minerals and precious stones, and finally to furnish some account of the extent of employment in mining generally.

(A) METALS.

§ 2. Gold.

1. **Discovery of Gold in Various States.**—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude the insertion of this matter in the present issue.

2. **Production of Gold at Various Periods.**—In the table hereunder will be found the value of the gold raised each year in the several States and in the Commonwealth from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret. For South Australia the records in the earlier years are somewhat irregular, and the remark applies to some extent also to the returns for Western Australia and Tasmania.

In New South Wales the yield for 1912 was much below the average, the output being the lowest recorded since 1902. The decreased yield is in large measure due to the circumstance that the demand for miners in other branches of the industry, coupled with the steady employment obtainable in other pursuits, has led to a slackening of operations at small claims and a neglect of prospecting. In Victoria the decrease was mainly due to the falling-off in the returns from the deep alluvial mines at Rutherglen and Ararat, and the quartz lodes at Ballarat, Scarsdale and Berringa. The deficiency in Queensland was due to the reduced returns from some of the chief centres such as Charters Towers, Gympie, and Rockhampton. More than half the fall in the gold production of Western Australia is attributable to a decline in the yield for the Mount Margaret field. There were decreases also in the East Coolgardie, Murchison, North and North East Coolgardie, Dundas, East Murchison, Phillips River and Ashburton fields. An improvement was shewn in other fields, particularly at Yilgarn, where the yield was the highest for many years.

VALUE OF GOLD RAISED IN AUSTRALIA, 1851 to 1912.

Year.	N.S.W.	Victoria.	Q'sland.	S.A.	W.A.	Tas.	N.T.	C'wealth.
	£	£	£	£	£	£	£	£
1851 ...	468,336	851,596	...	...	...	...	...	1,319,932
1852 ...	2,660,946	9,146,140	...	...	...	...	...	11,807,086
1853 ...	1,781,172	10,976,392	...	...	...	...	...	12,757,564
1854 ...	773,209	8,873,932	...	...	...	...	...	9,647,141
1855 ...	654,594	11,277,152	...	...	...	...	...	11,931,746
1856 ...	689,174	11,214,976	...	8,800	...	...	...	12,912,950
1857 ...	674,477	11,320,852	...	876	...	...	...	11,996,205
1858 ...	1,104,175	10,384,924	...	£2,348	...	...	...	11,491,447
1859 ...	1,259,127	9,394,812	...	730	...	...	...	10,654,669
1860 ...	1,465,373	8,896,276	11,631	...	...	...	...	10,373,280
1861 ...	1,806,171	8,140,692	3,137	...	...	...	...	9,950,000
1862 ...	2,467,780	6,920,804	499	12,442	...	...	...	9,401,525
1863 ...	1,796,170	6,779,276	11,820	...	...	...	...	8,587,266
1864 ...	1,304,926	6,469,788	66,513	...	...	...	...	7,861,227
1865 ...	1,231,243	6,446,216	74,216	...	...	...	...	7,751,675
1866 ...	1,116,404	6,187,792	68,325	...	...	...	...	7,372,521
1867 ...	1,063,578	6,005,784	151,125	...	...	4,382	...	7,214,869
1868 ...	994,665	6,739,672	473,956	2,986	...	2,536	...	8,213,765
1869 ...	974,149	6,179,024	471,681	15,593	...	514	...	7,586,961
1870 ...	981,016	5,217,216	390,925	24,217	...	7,475	...	6,570,849
1871 ...	1,250,485	5,475,768	492,635	6,000	...	14,218	...	7,239,106
1872 ...	1,644,177	5,325,508	527,365	6,363	...	16,055	...	7,519,468
1873 ...	1,396,375	4,681,588	572,996	293	...	18,390	...	6,669,642
1874 ...	1,041,614	4,390,572	1,082,899	4,175	...	18,491	...	6,537,751
1875 ...	877,694	4,273,668	1,196,583	7,054	...	11,992	...	6,366,961
1876 ...	613,190	3,855,040	1,140,282	9,888	...	44,923	...	5,683,323
1877 ...	471,448	3,238,612	1,043,780	...	...	23,289	...	4,777,129
1878 ...	430,200	3,032,160	1,149,240	1,225	...	100,000	...	4,712,825
1879 ...	407,219	3,035,788	1,034,216	90	...	230,835	...	4,708,308
1880 ...	444,253	3,316,484	944,869	...	...	201,297	...	4,906,903
1881 ...	573,582	3,333,512	957,570	880	...	216,901	111,945	5,194,390
1882 ...	526,522	3,458,440	785,868	3,080	...	187,337	82,274	5,043,521
1883 ...	458,530	3,121,012	736,810	10,534	...	176,442	77,195	4,580,523
1884 ...	396,059	3,114,472	1,062,471	15,469	...	160,404	77,935	4,826,810
1885 ...	378,665	2,940,872	1,062,514	18,295	...	155,309	70,414	4,626,069
1886 ...	366,294	2,660,784	1,187,189	32,535	1,148	117,250	63,139	4,428,389
1887 ...	394,579	2,471,004	1,481,990	72,003	18,517	158,533	68,774	4,665,400
1888 ...	317,241	2,500,104	1,690,477	34,205	13,273	147,154	34,802	4,737,256
1889 ...	434,784	2,459,352	2,695,629	37,305	58,871	119,703	47,651	5,853,295
1890 ...	460,285	2,354,240	2,182,563	20,808	86,664	75,888	80,769	5,261,217
1891 ...	559,231	2,805,596	2,030,312	27,380	115,182	145,459	98,701	5,281,861
1892 ...	575,299	2,617,824	2,164,391	26,097	226,284	158,917	109,638	5,378,470
1893 ...	651,286	2,684,504	2,167,794	12,561	421,385	141,326	108,130	6,186,986
1894 ...	1,156,717	2,867,816	2,330,282	33,401	787,099	217,024	109,699	7,592,098
1895 ...	1,315,929	2,960,344	2,150,561	26,060	879,748	206,115	102,816	7,641,573
1896 ...	1,073,360	3,920,344	2,132,979	14,350	1,068,808	237,574	81,210	7,828,629
1897 ...	1,104,315	3,251,064	2,552,668	39,020	2,564,977	296,660	81,210	9,889,914
1898 ...	1,201,743	3,349,028	2,750,348	10,676	3,990,698	291,496	84,789	11,678,776
1899 ...	1,623,320	3,418,000	2,838,446	15,582	6,246,732	327,545	63,565	14,333,190
1900 ...	1,070,920	3,229,628	2,871,578	14,494	6,007,610	316,220	67,988	13,578,438
1901 ...	737,164	3,102,753	2,541,764	16,613	7,235,653	295,176	76,609	14,005,732
1902 ...	684,970	3,062,028	2,720,512	24,878	7,947,661	301,573	70,325	14,811,947
1903 ...	1,060,029	3,259,482	2,839,801	28,650	8,770,719	254,403	61,600	16,294,684
1904 ...	1,146,100	3,259,045	2,714,334	76,025	8,424,226	280,015	3,983	15,897,337
1905 ...	1,165,013	3,173,744	2,517,295	45,853	8,305,654	312,380	30,971	15,550,910
1906 ...	1,078,866	3,280,478	2,313,464	27,000	7,622,749	254,963	54,225	14,631,745
1907 ...	1,050,730	2,954,617	1,978,938	20,540	7,210,749	277,607	21,928	13,515,109
1908 ...	954,854	2,849,838	1,975,554	12,300	6,999,882	242,482	23,943	13,058,853
1909 ...	869,546	2,778,956	1,835,178	30,206	6,776,274	190,201	24,148	12,054,509
1910 ...	802,211	2,422,745	1,874,955	28,000	6,246,848	157,370	21,711	11,553,840
1911 ...	769,353	2,140,855	1,640,323	15,000	5,823,075	132,108	30,910	10,551,624
1912 ...	702,129	2,039,464	1,477,979	28,000	5,448,385	161,300	22,671	9,879,928
Total £	59,462,975	291,703,453	75,217,830	920,810	109,298,871	7,407,282	2,065,688	546,076,909

The amount of gold raised in the Commonwealth in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States of the Commonwealth the years in which the greatest yields were obtained, were as follows:—New South Wales, 1852; Victoria, 1857; Queensland, 1900; South Australia, 1904, and Tasmania, 1899.

The following table shews the quantity in fine ounces of gold raised in each State and in the Commonwealth during each of the last ten years, the value of one ounce fine being £4 4s. 11½d.:—

QUANTITY OF GOLD PRODUCED IN THE COMMONWEALTH, 1903 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
1903	254,260	767,347	668,546	8,650	2,064,803	59,892	12,597	3,836,095
1904	269,817	765,596	639,150	17,837	1,983,230	65,921	938	3,742,549
1905	274,267	747,163	592,622	10,983	1,955,317	73,540	7,103	3,660,995
1906	253,987	772,290	544,636	8,037	1,794,548	60,023	11,085	3,444,606
1907	247,363	695,576	465,882	5,609	1,697,555	65,354	4,389	3,181,728
1908	224,792	670,909	465,085	2,908	1,647,912	57,085	5,624	3,074,815
1909	204,708	654,222	455,579	7,111	1,595,270	44,777	5,685	2,967,352
1910	188,857	570,362	441,402	6,603	1,470,633	37,048	5,100	2,720,005
1911	181,120	504,000	386,165	3,537	1,370,868	31,101	7,277	2,484,068
1912	165,295	480,131	347,946	6,592	1,282,658	37,973	7,811	2,328,406

3. **Changes in Relative Positions of States as Gold Producers.**—A glance at the figures in the table shewing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half the entire yield of the Commonwealth. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, a condition of things that has been maintained ever since. South Australia has occupied the position of lowest contributor to the total gold yield of the Commonwealth since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of the Commonwealth was as follows :—

RELATIVE POSITION OF STATES AS GOLD PRODUCERS, 1903 to 1912.

State.	Annual Average of Gold Production, 1903 to 1912.	Percentage on Commonwealth.	State.	Annual Average of Gold Production, 1903 to 1912.	Percentage on Commonwealth.
	£			£	
Commonwealth ...	13,353,855	100.00	New South Wales	961,884	7.21
Western Australia	7,162,856	53.64	Tasmania ...	226,283	1.69
Victoria ...	2,815,222	21.08	South Australia	31,159	0.23
Queensland ...	2,126,842	15.93	North'n Territ'y	29,609	0.22

4. **Methods of Gold Mining adopted in Each State.**—The circumstances of gold mining in the various States are not quite identical, for which reason reference is made to that of each State.

(i.) *New South Wales.* In New South Wales the earlier "rushes" were to surface alluvial or shallow-sinking grounds. Many of these were apparently soon worked out, but there is reason to believe that in some instances payable results would be obtained by treating the rejected wash-dirt on more scientific principles. With the exhaustion of the surface deposits discoveries were made by sinking to what are called deep alluvial leads, representing the beds of old drainage channels in Pliocene and Pleistocene times. The first of these deep alluvial leads was discovered at Forbes, in New South Wales in 1862. The Tertiary deep leads at Gulgong were discovered in 1871. Cretaceous leads occur at Tibooburra, and detrital gold has been found in permo-carboniferous conglomerates at Talawang. The method of dredging is at present being extensively used for winning gold from the beds of running streams, and from loose river flats and other wet ground where sinking would be impracticable. The system was introduced from New Zealand, where it was originally applied with great success on the Clutha River, and there are now dredges working on practically all the auriferous rivers of New South Wales. Hydraulic sluicing

is also employed in several places, the necessary machinery being fitted to a pontoon for convenience in moving from place to place. The quantity of alluvial gold obtained, other than by dredging, amounted to 6987 ozs. in 1912, the chief yields being—Braidwood, 1036 ozs.; Orange 637 ozs.; Windeyer, 500 ozs.; and Hill End 296 ozs. The quantity obtained by dredging was 20,649 ozs.; the largest returns being obtained at Araluen, 7950 ozs.; Stuart Town 2609 ozs.; Gundagai, 2178 ozs.; Adelong, 1527 ozs., and Nundle, 1297 ozs. The dredges in operation during 1912 numbered 67, of which 21 were of the bucket type and 46 were suction plants. In the recovery of gold 17 bucket dredges and 11 pumping plants were employed, while four bucket dredges and 35 pumping plants were engaged in the winning of stream tin. The value of the plants in operation was estimated at £355,096. The quantity of gold won from quartz amounted to 135,638 ozs. At the present time the Cobar district is the chief centre of the production from quartz, the yields from the Cobar and Canbelego fields included therein being respectively 51,175 ozs. and 17,305 ozs. Next come the Wellington field with 11,714 ozs.; Adelong, 7884 ozs.; Hillgrove, 6500 ozs.; Wyalong, 5882 ozs.; and Murrumburrah, 5863 ozs.

The table below shews as far as can be ascertained the yield from alluvial and quartz mining in each of the principal districts during 1912. Owing to the circumstance that it was impossible to obtain complete returns from the whole of the mine and battery owners the total for the State necessarily falls short of that given in preceding pages.

GOLD WON IN NEW SOUTH WALES, ALLUVIAL AND QUARTZ, 1912.

District.	Alluvial.		Quartz.	Total.
	Other than by Dredging.	By Dredging.		
	ozs.	ozs.	ozs.	ozs.
Albert	167	...	1,666	1,833
Bathurst	1,391	...	2,746	4,137
Clarence and Richmond	118	...	666	784
Cobar	...	...	69,690	69,690
Hunter and Macleay	...	...	168	168
Lachlan	311	2,178	19,067	21,556
Mudgee	918	81	16,371	17,370
New England	137	...	69	206
Peel and Uralla	967	2,568	6,695	10,230
Southern	1,250	9,555	9,538	20,343
Tambaroora and Turon	769	4,416	974	6,159
Tumut and Adelong	1,019	1,851	7,988	10,858
Total	7,047	20,649	135,638	163,334

(ii.) *Victoria.* Quartz-reefing predominates in Victoria, although a considerable amount of gold is obtained from alluvial workings, both surface and deep leads. The deepest mines in Australia are found in the Bendigo district, where the two deepest shafts were at the 31st December, 1912, 4614 and 4818 feet deep respectively. Altogether there were at the close of 1912 no less than fifty-three shafts in this district which had reached a depth of over 2000 feet. A considerable amount of attention is given to dredging and hydraulic sluicing, particularly in the Beechworth, Maryborough, Castlemaine, Ararat, Stawell, and Ballarat districts, the number of plants in operation at the end of 1912 being 93. The total quantity of gold won from dredge mining in 1912 was 73,214 ounces, and from sluicing 567 ounces, the total area treated being 672 acres. Tin to the value 2624 was also won. The yields from alluvial workings and quartz reefs as returned (in crude ounces) from the chief mining districts of the State during last year were as follows:—

GOLD WON IN VICTORIA, ALLUVIAL AND QUARTZ, 1912.

District.				Alluvial.	Quartz.	Total.
				ozs.	ozs.	ozs.
Ararat and Stawell	...	...	...	11,438	8,104	19,542
Ballarat	...	...	...	11,084	53,315	64,349
Beechworth	...	...	...	70,493	15,252	85,745
Bendigo	...	...	...	2,812	169,204	172,016
Castlemaine	...	...	...	11,268	61,278	72,546
Gippsland	...	...	...	6,497	16,418	22,915
Maryborough	...	...	...	42,486	25,720	68,206
Total	...	...	...	156,028	349,291	505,319

The largest output from lode mines in 1912 was furnished by the Central Red, White and Blue, at Bendigo, with 13,650 ozs.; followed by the Lord Nelson, St. Arnaud, with 13,146 ozs.; the North Nuggetty Ajax, Daylesford, with 11,474 ozs.; and the Johnson's Reef, Bendigo, with 9962 ozs. Of the deep alluvial mines the Great Southern at Rutherglen produced 11,332, and the Duke and Main Leads Consols, at Maryborough, 9951 ozs. In dredging, the Tewkesbury Amalgamated, at Bright, headed the list with a return of 4438 ozs.

(iii.) *Queensland.* Operations in Queensland are at present chiefly confined to quartz reefing, the yield from alluvial in 1912 being only 3830 ounces, of which 1274 ozs. were won at the Batavia River field, while the quantity produced from quartz was 207,939 ounces; from copper and other ores 130,931 ounces; and from old tailings 5246 ounces; making a total production of 347,946 ounces, valued at £1,477,979. The yields from the principal fields are given below:—

GOLD WON IN QUEENSLAND, ALLUVIAL AND QUARTZ, 1912.

District.				Alluvial.	Quartz.	From Copper and other Ores and old Tailings.	Total.
				fine ozs.	fine ozs.	fine ozs.	fine ozs.
Charters Towers	...	...	...	368	95,392	286	96,046
Gympie	...	...	...	236	37,733	1,539	39,508
Mount Morgan	...	...	...	195	28,081	108,960	137,236
Ravenswood	...	...	...	109	22,480	40	22,629
Croydon	...	...	...	...	5,950	2,413	8,363
Etheridge, Oaks and Woolgar	...	...	...	704	13,804	563	15,071
Cloncurry	...	...	...	59	...	12,980	13,039
Gladstone	...	...	...	72	1,105	1,306	2,483
Rockhampton	...	...	...	26	86	6,628	6,740
Other districts	...	...	...	2,061	3,308	1,462	6,831
Total	...	...	...	3,830	207,939	136,177	347,946

(iv.) *South Australia.* In South Australia alluvial gold has been worked for many years in the gullies round Adelaide, while a fair amount of gold has been obtained by this method at Teetulpa, in the northern areas. The battery and cyanide returns as published in the "Mining Review" shew that the chief producing centres in 1912 were Tarcoola and Tarcoola Blocks, Deloraine, Kirkeek's Treasure, Nillinghoo, Kitticoola, Reedy Creek, and Mt. Grainger.

The total output of gold for 1912 from the Northern Territory amounted to 7811 ounces, valued at £22,671.

(v.) *Western Australia.* In Western Australia operations are confined principally to quartz reefing, the returns from ordinary alluvial and hydraulic sluicing being comparatively small. The total production of gold from all sources during 1912 was 1,282,658 ounces, of which only about 0.3 per cent. was alluvial. The yields in each district were as shewn below :—

GOLD WON IN WESTERN AUSTRALIA, ALLUVIAL AND QUARTZ, 1912.

Goldfields.				Alluvial.	Dolled and Specimens.	Crushed.	Total.
				Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.
East Coolgardie	...	...	...	521	1,488	754,786	756,795
East Murchison	...	...	...	21	2,200	96,910	99,131
Mount Margaret	...	...	...	1,054	493	101,423	102,970
Murchison	...	...	...	396	1,828	103,149	105,373
North Coolgardie	...	...	...	79	113	58,078	58,270
Coolgardie	...	...	...	449	302	41,431	42,182
Phillips River	...	...	...	26	44	4,131	4,201
North-east Coolgardie	...	...	...	201	1,364	12,291	13,856
Yilgarn	...	...	...	3	38	30,634	30,675
Broad Arrow	...	...	...	47	419	12,909	13,375
Peak Hill	...	...	...	367	28	1,467	1,862
Pilbara	...	...	...	513	267	5,219	5,999
Dundas	...	...	...	...	338	24,976	25,314
Yalgoo	...	...	...	224	36	5,906	6,166
West Pilbara	...	...	...	98	...	1,020	1,118
Ashburton	...	...	...	39	...	...	39
Kimberley	...	...	...	272	...	...	272
Other goldfields	...	...	...	7	...	240	247
Total	...	...	...	4,317	8,958	1,254,570	1,267,845

The figures in the above table are compiled from returns from the individual mines and are somewhat incomplete; the total is therefore less than that shewn on page 407, which represents mint and export returns.

(vi.) *Tasmania.* The yield from Tasmania is also chiefly obtained from quartz reefing, although there is a little alluvial mining carried on, as shewn in the table hereunder. The yields as returned from each district in 1912 are given below :—

GOLD WON IN TASMANIA, ALLUVIAL AND QUARTZ, 1912.

District.	Quartz.	Alluvial.	Cyanide.	Blister Copper.	Silver Lead Bullion.	Total.
	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.	Ozs.
Beaconsfield	11,122	...	9,933	...	...	21,055
Mathinna	74	...	262	...	...	336
Mt. Victoria	...	...	...	...	...	...
Warrantinna	31	255	...	...	...	286
Mt. Cameron	...	...	...	...	...	...
Lefroy	19	18	...	...	...	37
Lisle	...	...	...	...	...	...
Goleconda	...	189	...	...	...	189
Lilydale	...	...	...	...	...	...
West Coast	...	100	...	7,351	8,673	16,124
Total	11,246	562	10,195	7,351	8,673	38,027

The total production was valued at £161,800, equal to 37,973 ozs. fine, considerably more than half of which was produced by the Tasmania Gold Mine Ltd., at Beaconsfield.

(vii.) *Northern Territory.* Pine Creek is the chief mining field in the Northern Territory, but operations have for many years been carried on in a desultory manner, chiefly by Chinese labour. It is stated that the field has been unfairly exploited, the rich pockets only having being scooped out without any systematic prospecting. Confidence in the auriferous prospects of the area has been shaken by the failure of various companies, but in the view of the Mines Department the ground has not been properly tested or systematically mined, and the Department proposes to sink to a depth of 300 feet and prove that with proper methods the area is worthy of renewed exploration. The chief yields in the Pine Creek district were from the Eleanor and Kohinoor mines, which returned gold to the value of £11,086 and £1506 respectively.

5. Remarkable Masses of Gold.—Allusion has already been made in preceding Year Books to the discovery of “nuggets” and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue.

6. Modes of Occurrence of Gold in Australia.—This subject has been alluded to at some length in preceding issues of the Year Book, but considerations of space will not permit of repetition in the present issue.

7. Place of Commonwealth in the World's Gold Production.—In the table given below will be found the estimated value of the world's gold production, and the share of the Commonwealth therein during the ten years 1903 to 1912. The figures given in the table have been compiled chiefly from returns obtained direct by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

WORLD'S GOLD PRODUCTION, 1903 to 1912.

Year.	World's Production of Gold.	Gold produced in Commonwealth.	Percentage of C'wealth on Total.
	£	£	%
1903	66,701,000	16,295,000	24.43
1904	70,611,000	15,897,000	22.51
1905	76,974,000	15,551,000	20.20
1906	83,290,000	14,632,000	17.57
1907	84,827,000	13,515,000	15.93
1908	91,434,000	13,059,000	14.28
1909	93,337,000	12,605,000	13.51
1910	93,719,000	11,554,000	12.33
1911	94,949,000	10,552,000	11.11
1912	95,358,000	9,880,000	10.36

While the production of gold in the Commonwealth shews a slight decrease during the sixteen years from 1897 to 1912, the world's total production practically doubled itself in the same period. The following table will be found interesting, as shewing the various foreign countries where the chief increases have taken place during the interval in question:—

INCREASE IN GOLD YIELD, VARIOUS COUNTRIES, 1897 to 1912.

Country.	1897.	1900.	1910.	1911.	1912
	£	£	£	£	£
United States ...	11,787,000	16,269,000	19,781,000	19,909,000	18,840,000
Canada ...	1,240,000	5,742,000	2,097,000	2,010,000	2,599,000
Mexico ...	2,045,000	1,884,000	4,930,000	5,069,000	4,974,000
Transvaal ...	11,654,000	1,481,000	31,973,000	35,041,000	38,686,000
Rhodesia ...	800	308,000	2,568,000	2,648,000	2,707,000
Gold Coast ...	85,000	38,000	780,000	1,079,000	1,499,000
Madagascar ...	8,500	142,000	142,000	389,000	289,000
India ...	1,571,000	1,893,000	2,202,000	2,238,000	2,272,000
Korea ...	208,000	371,000	955,000	953,000	961,000
Japan ...	142,000	290,000	596,000	639,000	639,000
Java ...	24,000	112,000	723,000	625,000	550,000
Costa Rica ...	2,000	31,000	96,000	149,000	95,000

The largest increase was recorded in the Transvaal, where the production more than trebled itself in the sixteen years 1897 to 1912.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shewn in the following table:—

PERSONS EMPLOYED IN GOLD MINING, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	C'w'lt'h.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ...	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1908 ...	6,363	20,853	7,736	880	16,075	843	333	53,083
1909 ...	5,585	18,671	7,150	920	17,027	713	257	50,323
1910 ...	5,247	16,553	6,115	950	16,279	682	306	46,132
1911 ...	4,650	14,015	5,227	920	15,428	570	358	41,168
1912 ...	3,898	11,856	5,500	920	13,700	485	263	36,622

§ 3. Platinum and the Platinoid Metals.

1. **Platinum.**—(i.) *New South Wales.*—The existence of platinum was first noted in New South Wales in 1851 by Mr. S. Stutchbury, who found a small quantity near Orange. Since the year 1878 small quantities of the metal have been obtained from beach sands in the northern coastal district. Platiniferous ore was noted in 1889 at Broken Hill. The chief deposits at present worked in the State are situated at Fifield, near Parkes, but the entire production in 1912 was small, amounting to only 610 ozs., valued at £3880, while the total production recorded to the end of 1912 amounted to 12,990 ozs., valued at £29,010.

The bulk of the production in 1912 was obtained by individual miners working with somewhat crude methods. Gold is found in association with platinum in the washdirt, the proportion being about 4 to 8 parts of platinum to 1 of gold.

(ii.) *Victoria.* In Victoria the metal has been found in association with copper at the Walhalla Copper Mine in Gippsland. The mine was worked extensively from 1874 to 1881 and then abandoned, but was reopened in 1910. It is stated that there are 70,000 tons of ore in sight, assaying three to four per cent. copper, and containing also platinum and silver. The production of platinum in 1911 amounted to 184 ozs., valued at £989.

2. *Osmium, Iridium, etc.*—(i.) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. As far back as 1860, the Rev. W. B. Clarke states that he found native iridium. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii.) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii.) *Tasmania.*—For many years osmiridium has been known to exist in the bed of the Savage River, on the West Coast, and in rivulets and creeks in the Serpentine country, but it was not until early in 1911 that efforts were made to work the deposits. During that year the price paid for the mineral was as high as £7 10s. per oz., and about 100 men were engaged in the search for it. The quantity produced amounted to 272 ozs., valued at £1888. In 1912 the production was 779 ozs., valued at £5742, or an average of £7 7s. 9d. per oz. Early in 1913 a prospector was reported to have found near the Pieman River a piece of osmiridium weighing two ounces, the largest "nugget" of this metal ever found.

§ 4. Silver.

1. *Occurrence in Each State.*—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. I. to V., but considerations of space preclude the repetition of this matter in the present volume.

2. *Development of Silver Mining.*—In illustration of the development of silver mining in Australia the following table has been compiled, shewing the production of silver, silver-lead and ore, and lead from each State during the years 1881, 1891, 1901, and the five years ending 1912:—

PRODUCTION OF SILVER AND LEAD, AUSTRALIA, 1881 to 1912.

Year.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tasmania.	North. Terr.	C'wealth.
	£	£	£	£	£	£	£	£
1881	...	5,239	13,494	1,182	11,224	...	...	31,139
1891	3,621,614	6,017	21,879	1,787	250	62,138	4,140	3,717,825
1901	1,954,964	6,550	69,234	3,886	7,718	325,335	...	2,367,687
1908	2,346,941	2,835	206,716	9,000	23,883	322,007	30	2,911,412
1909	1,839,688	2,310	167,636	673	19,977	298,880	...	2,329,164
1910	2,110,040	2,090	123,086	907	20,210	247,576	...	2,503,909
1911	2,652,548	2,070	79,765	140	33,335	*253,361	...	3,021,219
1912	3,745,796	2,000	121,855	326	38,918	309,098	820	4,218,813

* Exclusive of silver to the estimated value of £42,831 contained in blister copper.

(i.) *New South Wales.* The figures quoted for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it must be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and it is considered, therefore, that the State should not take full credit for the finished product. Hence the *net* value referred to above relates to that of the ore, concentrates, and bullion, as declared by the several companies to the Customs Department at date of export. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity and value of these metals locally produced, and the quantity and value of concentrates exported during the last five years, will shew the estimated total value of the yield:—

VALUE OF PRODUCTION FROM SILVER-LEAD MINES OF NEW SOUTH WALES,

1908 TO 1912.

Year.			Value of Silver, Lead, and Spelter produced within the C ^y wealth.	Value of Concentrates Exported.	Total.
			£	£	£
1908	...	...	2,008,410	2,400,997	4,409,407
1909	...	...	1,176,394	2,707,680	3,884,074
1910	...	...	1,755,220	3,180,850	4,936,070
1911	...	...	1,949,271	3,259,246	5,208,517
1912	...	...	2,477,442	3,692,352	6,169,794

As regards silver alone, the following table, which has been prepared on a basis similar to that on which the preceding table was compiled, shews the estimated total quantity and value of that metal yielded by the mines of New South Wales up to the end of 1903 and during the last nine years:—

ESTIMATED QUANTITY AND VALUE OF SILVER YIELDED BY MINES OF NEW SOUTH WALES, TO END OF 1912.

Period.	Produced in Australia.		Contained in Concentrates, etc., Exported.		Total Production.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
To the end of 1903 ...	Fine ozs. 82,947,404	£ 13,807,421	Fine ozs. 104,659,834	£ 18,330,147	Fine ozs. 187,607,238	£ 32,137,568
1904 ...	7,751,667	920,947	2,945,058	349,891	10,696,725	1,270,838
1905 ...	6,804,934	852,533	3,480,561	436,050	10,285,495	1,288,583
1906 ...	5,575,410	775,409	3,111,013	432,689	8,686,423	1,208,078
1907 ...	5,921,457	705,982	6,228,225	845,845	12,149,682	1,641,827
1908 ...	6,484,288	693,034	5,499,381	587,768	11,983,669	1,290,802
1909 ...	3,717,016	382,605	6,867,775	732,563	10,584,791	1,115,168
1910 ...	5,196,323	561,280	7,608,336	843,257	12,804,659	1,404,537
1911 ...	5,731,468	620,578	8,797,677	973,210	14,529,145	1,593,788
1912 ...	5,220,538	641,707	8,293,711	1,086,715	13,514,249	1,678,422
Total ...	135,350,505	20,051,496	157,491,571	24,568,115	292,842,076	44,619,611

3. *Chief Centres of Silver Production.*—Broken Hill, in New South Wales, and Zeehan, in Tasmania, are the great centres of silver production in Australasia. The production in Queensland has, however, considerably expanded during the last few years.

(i.) *New South Wales.* (a) *Broken Hill.* A description of the silver-bearing area in this district is given in preceding issues of the Year Book. Owing to the high prices ruling for the various metals, the years 1911 and 1912 were characterised by great activity in the Broken Hill district, and each of the mines on the line of lode worked to its fullest capacity. The value of the output in 1912 was £4,437,000 as compared with £3,832,000 in 1911.

Although the returns are not complete in all cases, the following table relating to the mines at Broken Hill will give some idea of the richness of the field:—

RETURNS OF BROKEN HILL SILVER MINES TO END OF 1912.

Mine.	Authorised Capital.	Value of Output to end of 1912.	Dividends and Bonuses Paid to end of 1912.
	£	£	£
Broken Hill Proprietary Co. Ltd. ...	600,000	34,710,053*	10,256,000
Broken Hill Proprietary Block 14 Co. ...	155,000	3,448,108	536,660
British Broken Hill Proprietary Co. ...	339,000	2,682,937	474,100
Broken Hill Proprietary Block 10 Co. ...	1,000,000	3,993,513	1,280,000
Sulphide Corporation Ltd. (Central Mine) ...	1,100,000	13,409,085†	1,230,625
Broken Hill South Silver Mining Co. ...	200,000	4,978,900	1,195,000
North Broken Hill Mining Co. ...	600,000	2,708,202†	658,940
Broken Hill Junction Lead Mining Co. ...	150,000	838,569†	85,000
Junction North Broken Hill Mine ...	250,000	1,359,044	79,793
The Zinc Corporation Ltd. ...	†	870,271	10,000†
Broken Hill South Extended Ltd. ...	337,500	150,344	50,000
Totals ...	4,731,500	69,149,026	15,856,118

* The value of the ores purchased during the years 1908 to 1912 is not included. † Incomplete.

‡ This company went into liquidation on 24th July, 1911, and after that date the mine was worked by the Zinc Corporation Ltd. Separate details regarding capital not available.

(b) *Yerranderie.* The mines on the Yerranderie field in the Southern Mining District produced 676,095 ozs. of silver in 1912, besides 1438 ozs. of gold, and 1906 tons of lead, the total production being valued at £121,859. Mining operations in this locality are carried on under considerable difficulties owing to the heavy cost of transport, but it is hoped that with the construction of a railway to the field, it will be possible to treat lower grade ores with profit.

(c) *Kangiarra.* The yield from the Kangiarra field, in the Yass district, consisted of 93,088 ozs. of silver, besides gold, 233 ozs.; lead, 1177 tons; and copper, 250 tons; the total production being valued at £45,536.

(d) *Conrad.* The ore raised by the Conrad Mines Ltd., at Howell, in the Tingha division, amounted in 1912 to 21,958 tons, valued at £51,097. The ore contents were estimated at 395,244 ozs. of silver; 1646 tons lead; 435 tons of zinc; and 220 tons of copper. The number of men employed in 1912 was 193, and the value of plant and machinery, £11,150.

(e) *Cobar.* A considerable quantity of silver is obtained from the Great Cobar Ltd. Mine and attached properties, the production in 1912 amounting to 202,330 ozs. At the Cobar Peak Silver Mine the production was 8135 ozs.

(ii.) *Tasmania, West Coast.* The production of silver-lead ore in 1912 was 90,124 tons, valued at £309,098, to which the Hercules Mine at Dundas contributed 30,887 tons, valued at £95,526. The next highest yield came from the Primrose at Rosebery, with £40,141, followed by the Zeehan Montana at Zeehan with £29,505, the North Mt. Farrell £24,662, and the Comet, Dundas, with £15,597.

(iii.) *Queensland.* The yield for the chief silver-producing centres in 1912 was as follows:—Chillagoe, £19,197; Herberton, £9988; Charters Towers, £7091; Stanthorpe, £8078; Cloncurry, £4712.

(iv.) *South Australia.* Rich specimens of silver ore have been discovered at Miltalie, near Cowell, in South Australia. The surrounding district is highly mineralized, but, so far, has not been thoroughly prospected.

4. World's Production of Silver.—The world's production of silver during the last ten years is estimated to have been as follows:—

WORLD'S PRODUCTION OF SILVER, 1903 to 1912.

Year ...	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
World's production in 1000 fine ozs.*	173,222	176,840	181,338	184,552	183,386	212,570	227,291	240,223	254,214	250,979

* Add 000 to figures for fine ounces.

Australasia's share in the world's silver production in 1912 was estimated at 16,112,000 ounces, or about 6½ per cent. on the total production.

5. Prices of Silver.—As the production of silver is dependent to a very large extent on the price realised, a statement of the average price per standard ounce paid by the London Mint at various periods and during the last five years is given below:—

PRICE OF SILVER, 1871 to 1912.

Year ...	1871.	1881.	1891.	1901.	1908.	1909.	1910.	1911.	1912.
Pence per standard oz.	60½	51½	45½	27½	24½	23½	24½	24½	28½

During the month of November, 1906, owing to the small sales in New York, and also to the fact that the Indian, American, and Mexican Governments were all buying silver, the price rose to 33½d., the highest realised since 1893, when the average stood at 36½d.

6. Employment in Silver Mining.—The number of persons employed in silver mining in 1901 and during each of the last five years is given below:—

NUMBER OF PERSONS EMPLOYED IN SILVER MINING, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Terr.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901...	6,298	...	40	150	...	2,414*	†	8,902‡
1908...	7,560	3	496	50	5	1,740	†	9,854
1909...	6,207	...	354	40	5	1,516	†	8,122
1910...	7,999	...	590	60	21	1,173	65	9,908
1911...	8,495	...	433	30	43	1,125	47	10,173
1912...	9,062	...	208	30	60	1,681	...	11,041

* Including copper miners. † Included in South Australia. ‡ Including copper miners in Tasmania.

As the table shews, the bulk of the employment was in New South Wales and Tasmania, the quantity of silver raised in the other States, excepting Queensland, being unimportant.

§ 5. Copper.

1. Production of Copper.—The production of copper in the various States of the Commonwealth has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The quantity and value of the production in earlier years and for 1908 to 1912 is shewn in the following tables:—

PRODUCTION OF COPPER, AUSTRALIA, 1881 to 1912.

State.	1881.	1891.	1901.	1908.	1909.	1910.	1911.	1912.
QUANTITY.								
N.S.W. ... { Copper	Tons.	Tons	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Ore	*	*	6,087	8,679	6,857	8,435	10,618	8,990
Victoria... { Copper			645	392	109	4,455	1,482	2,044
& Ore	*	*	...	983	17	150	36	...
Q'land ... { Copper	330	85	3,061	14,961	14,494	16,387	20,384	23,120
S. Aust. ... { Copper	3,824	3,551	6,736	...	5,776	75,199	5,922	6,295
Ore	21,638	13,239	2,353	6,152	1,345	...	...	...
W. Aust. ... { Copper	...	...	...	479	833	1,281	10,654	8
Ore	...	*	10,157	2,503	6,959	6,309	...	9,556
Tasmania { Copper	...	...	9,730	8,833	8,638	8,864	8,308	6,528
Ore	...	...	10,029	1,185	1,588	...	...	...
Northern Territory	...	...	...	...	...	...	163	377
C'wealth { Copper	...	...	25,614	44,167	36,598	40,166	57,567	56,918
Ore	...	...	23,184	...	10,018	10,914	...	...

* Not available.

* Including 97 tons of copper, Northern Territory.

VALUE.

	£	£	£	£	£	£	£	£
New South Wales...	227,667	119,195	412,292	502,812	424,737	486,257	590,102	579,791
Victoria ...	8,186	216	...	3,928	44	450	2,088	...
Queensland ...	19,637	3,554	194,227	893,535	853,196	932,469	1,151,351	1,698,280
South Australia ...	418,296	235,317	500,077	345,968	342,329	*307,316	332,500	461,500
Western Australia ...	...	4,463	75,246	57,091	104,644	95,928	78,118	60,537
Tasmania ...	...	...	1,026,748	609,651	608,038	566,972	408,649	440,444
Northern Territory	...	...	...	...	...	...	1,470	3,998
Commonwealth ...	673,786	362,745	2,208,590	2,412,985	2,332,988	2,389,412	2,564,278	3,244,550

* Including £1196, Northern Territory.

A short account of the discovery of copper in the different States is given in the earlier Year Books.

2. **Sources of Production.**—(i.) *New South Wales.* The principal seat of the copper-mining industry at the present date is in the Cobar district, the value of the deposits there being first recognised in 1869. The value of the output from this district in 1912 was £410,155, out of a total for the State of £579,791. Operations at the Great Cobar Mine were to some extent interfered with owing to lack of skilled labour, nevertheless the output of copper totalled 6650 tons as against 6548 tons in 1911.

From the Grafton Company's mine at Cangai the output was valued at £57,161, as compared with £33,288 in the preceding year. The metallic products comprised 788 tons of copper, 320 ozs. of gold, and 6410 ozs. of silver. The Kyoie mine, in the Cooma division, contributed materially to the total output, the production from this mine being valued at £52,459. The Kangiara mines, in the Yass division, raised 3856 tons of copper ore, estimated to contain 250 tons of copper valued at £17,040.

The Electrolytic and Refining and Smelting Company of Australia Limited, established at Port Kembla, had a successful year, the output of electrolytic copper being 16,888 tons, most of which was made from imported blister copper.

(ii.) *Victoria.* The copper produced in this State was obtained from the mine near Walhalla operated by the Gippsland Copper, Platinum, and Gold Mining and Smelting Company. During 1911 the company smelted 1116 tons of copper ore and 18 of auriferous quartz, and from the resultant 91 tons of matte, copper was produced to the value of £2088, silver valued at £65, gold at £220, and platinum at £989. There was no production recorded in 1912.

(iii.) *Queensland.* The yield in this State amounted in 1912 to 23,120 tons, valued at £1,698,280, to which the Cloncurry field contributed 10,435 tons, valued at £761,755. Next in order were Mount Morgan with 7068 tons, valued at £516,000; Gladstone, 1764 tons, £128,916; Rockhampton, 1345 tons, £105,921; Etheridge, 1242 tons, £93,600; Cloncurry, 1142 tons, £83,366; Mount Perry, 443 tons, £30,567; and Chillagoe, 417 tons, £31,376.

Exploration of the deeper ground at Cloncurry has confirmed the belief in the richness of the field, and the district is now generally recognised as the most extensive and richest cupriferous area in Australia.

(iv.) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State in the Commonwealth. In recent years, however, Tasmania, Queensland, and New South Wales have come to the front as copper producers, as the table on the preceding page will shew. Deposits of copper ore are found over a large portion of South Australia. The Kapunda mine, discovered in 1842 by Messrs. Dutton and Bagot, is situated fifty miles north of Adelaide, and is the oldest copper mine in the State. Up to the end of 1879 the production amounted to 70,000 tons, the metal possessing such a high standard of purity that it always obtained the highest prices in the world's markets. During the nine years 1870 to 1878 the production was valued at £157,000. The Burra Burra mine, located in 1845 by a shepherd named Pickett, is situated about 100 miles north of Adelaide. The original capital invested in this mine was £12,320 in £5 shares, on which no call was ever made, while dividends to the amount of £800,000 were paid. For many years this mine produced from 10,000 to 13,000 tons of ore, averaging 22 to 23 per cent. of copper. During the 29½ years in which the mine was worked the production was valued at £4,749,000. In 1859 as many as 1170 persons were employed on it. The mine has lain practically idle for many years.

Yorke's Peninsula, between Spencer's Gulf and St. Vincent's Gulf, contains a large area of copper-bearing country. The principal mines at Wallaroo and Moonta are situated a few miles from Port Wallaroo, and date back to 1860. For about thirty years the Moonta mines were worked independently, selling their ores to the Wallaroo company. During its separate existence the Wallaroo field produced about £2,600,000 worth of copper, while Moonta yielded £5,396,000, and was the first Australian mining field to produce £1,000,000 in dividends. The amalgamation took place in 1889, and since that year the united properties have produced about £4,281,000 worth of copper. The entire yield from the date of first working is estimated at about £12,500,000. The mines just enumerated represent a very small proportion only of those opened on the copper-bearing areas of the State. The bulk of the production in 1912 came from the Moonta and Wallaroo mines.

(v.) *Western Australia.* The value of copper exported from this State in 1912 was £60,537. According to the returns, the production in the West Pilbara field was 12,284 tons, valued at £104,289, while the Phillips River field shewed a production of 1318 tons, valued at £15,815. A small quantity of copper ore was raised at the Murchison goldfields.

(vi.) *Tasmania.* The quantity of blister copper and copper ore produced in Tasmania during 1912 was 6528 tons, valued at 440,444, the bulk of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 259,018 tons of ore in 1912, and produced 5136 tons of blister copper, containing copper to the value of £385,739; silver, £45,225; and gold, £31,242. The Mount Balfour field raised 1220 tons of ore, valued at £8018, and the Jasper Copper Co., at Heazlewood, 14 tons, valued at £325.

(vii.) *Northern Territory.* The production in 1912 was returned at £3998, but as in the case of other minerals the deposits have not yet been scientifically mined. There is an extensive lode at Coronet Hill and a large area of cupriferous country in the surrounding district. Good copper shows have been located at Woollogarang on Settlement Creek. It is proposed to make further tests of the deposits near Rum Jungle.

3. Price of Copper.—The great variation in price that the metal has undergone is shewn in the following table, which gives the average price in London and New York during 1901 and in each of the last five years. The figures are given on the authority of "The Mineral Industry."

FLUCTUATION IN VALUE OF COPPER, 1901 and 1908 to 1912.

Year.	London Price per Ton Standard Copper.		New York. Price in Cents per lb.	
			* Lake Copper.	Electrolytic Copper.
	£		Cents.	Cents.
1901	...	66.79	16.55	16.11
1908	...	59.90	13.42	13.21
1909	...	58.73	13.34	12.98
1910	...	57.05	13.04	12.74
1911	...	55.97	12.63	12.88
1912	...	72.94	16.56	16.34

* The term "Lake" copper is used to designate all copper sold in the trade as such, regardless of the process by which it is refined.

4. Relationship to World's Production.—The world's production of copper in 1901 and during the last five years is estimated to have been as follows:—

WORLD'S PRODUCTION OF COPPER, 1901 and 1908 to 1912.

Year	...	...	...	...	1901.	1908.	1909.	1910.	1911.	1912.
World's production— (short tons)	...	...	...	...	583,517	835,623	942,408	966,998	969,750	1,114,769

5. Employment in Copper Mining—The number of persons employed in copper mining during 1901 and in each of the last five years was as follows:—

PERSONS ENGAGED IN COPPER MINING, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wealth.
	No.	No.	No.	No.	No.	No.	No.	No.
1901	2,964	4	814	4,000	321	*	†	8,103‡
1908	2,745	9	3,540	4,470	283	2,076	88	13,211
1909	2,024	2	3,241	4,450	497	2,038	54	12,306
1910	2,286	40	2,418	4,150	559	2,042	49	11,544
1911	2,151	57	2,458	4,030	317	1,565	29	10,607
1912	2,384	6	3,457	4,500	223	1,681	52	12,303

* Included with silver miners. † No returns. ‡ Excluding Tasmania.

§ 6. Tin.

1. Production of Tin.—The development of tin mining is, of course, largely dependent on the price realised for the metal, and, as in the case of copper, the production has been subjected to somewhat violent fluctuations. The table below shews the production in each of the Commonwealth States during the years 1881, 1891, 1901, and 1908 to 1912:—

TIN PRODUCED IN AUSTRALIA, 1881 to 1912.

State.	1881.	1891.	1901.	1908.	1909.	1910.	1911.	1912.
QUANTITY.								
New South Wales { Ingots	Tons. 5,824	Tons. 1,454	Tons. 648	Tons. 954	Tons. 951	Tons. 847	Tons. 958	Tons. 900
Ore	609	203	11	841	992	1,021	970	1,175
Victoria ... Ore	†	†	77	79	89	41	33	48
Queensland* ... Ore	†	†	1,661	4,885	3,326	2,953	3,091	3,230
West Australia (Ore & Ingot)	†	†	734	1,093†	698†	500†	495	575
Tasmania ... Ore	†	†	1,790	4,521	4,511	3,701	3,953	3,714
Northern Territory Ore	...	†	81	441	427	364	239	271
Commonwealth { Ingots,	†	†	5,002	12,814	10,994	9,427	9,739	9,913
ore, etc.								
VALUE.								
New South Wales... { Ingots	£ 531,303	£ 124,320	£ 76,060	£ 126,292	£ 127,089	£ 127,700	£ 307,089	£ 338,074
Ore	37,492	9,643	464	79,155	83,940	100,456		
Victoria ... Ore	7,334	5,062	4,181	6,070	7,067	3,706	3,417	5,733
Queensland ... Ore	193,699	116,387	93,723	341,566	244,927	243,271	307,847	364,503
West Australia (Ore & Ingot)	...	10,200	40,000	83,595	65,959	45,129	55,220	70,578
Tasmania ... Ore	376,775	293,170	212,542	421,580	418,165	399,393	513,500	543,103
Northern Territory Ore	...	1,938	5,586	35,876	32,741	31,113	22,900	27,001
Commonwealth ...	1,145,603	560,750	432,576	1,094,134	979,888	950,768	1,209,973	1,348,992

* Dressed tin ore, about 70% tin. † Tin ingot and ore. ‡ Not available.

2. Sources of Production.—(i.) *New South Wales.* The bulk of the output in New South Wales was obtained by dredging, the quantity so won in 1912 being 1621 tons, valued at £223,813. In the Tingha division the yield amounted to 1006 tons, valued at £139,865, the yield from dredging being estimated at £104,006. The Emmaville division in the New England district shewed a yield of 1118 tons of ore, valued at £156,590, of which dredging produced 743 tons, valued at £104,090. In the Wilson's Downfall division 167 tons, valued at £23,285, were raised. The new field at Ardlethan, discovered in January, 1912, produced about 500 tons of ore, of which 379 tons realised £7741.

(ii.) *Victoria.* In Victoria lode tin has been discovered at Mt. Wills, Beechworth, Eldorado, Chiltern, Stanley, and other places in the north-eastern district; and stream tin has been found in a large number of places, including those just mentioned in the north-eastern district. The bulk of the production in 1912 was obtained by the Cocks Pioneer, at Beechworth, and the Walwa Tin Mining Company, at Walwa.

(iii.) *Queensland.* The continued high price of the metal during 1912 was reponsible for renewed activity in tin mining, particularly in the Herberton district, where there was increased development in existing mines, while great attention was devoted to recent discoveries and also to deposits hitherto regarded as insufficiently productive. Besides the ordinary creek and stream alluvial, extensive layers of stanniferous wash capping many of the ridges have been profitably worked. The yield for this district amounted in 1912 to £209,893. From the other chief districts the yields were as follows:—Chillagoe, £51,777; Cooktown, £36,233; Stanthorpe, £21,428 and Kangaroo Hills, £20,340.

(iv.) *Western Australia.* The production of tin ore and ingot for the State during 1912 amounted to 575 tons, valued at £70,578, to which the Greenbushes field contributed 430 tons, valued at £50,166, and the Pilbara field 123 tons, valued at £14,993. Production at the former field shewed increased activity during the year, but in view of the high prices ruling for the metal the decrease at the latter is difficult to understand.

(v.) *Tasmania.* The tin ore raised in 1912 amounted to 3713 tons, valued at £543,103, the largest contributor to the total being the Mount Bischoff Co. in the North Western Division. This company treated 230,506 tons of ore from which 1200 tons of tin oxide valued at £168,000 were obtained. The dividends paid for the year amounted to £75,000, and the total to the end of 1912 to £2,362,500. The Mt. Bischoff Extended produced 171 tons of calcined tin oxide. In the North-Eastern Division, the Briseis Co. produced 538 tons of black tin, valued at £82,000; the Pioneer obtained 468 tons, valued at £75,000. In the Eastern Division the Anchor Co. Ltd. produced 143 tons, valued at £20,000. In the Western Division the Renison Bell produced 62 tons of metallic tin, valued at £12,716.

(vi.) *Northern Territory.* Mount Wells, in the Burrundie district, has yielded a fair output of tin since 1886, but the present system of handling the ore is reported to be costly, the mining being done by tributors, whose parcels have to be kept separate. About 60 men, mostly Chinese, are employed at the mine. Copper, silver lead and tin shows occur abundantly in the district, but little work has been done on them. Great hopes for the future are placed by the Department in the Horseshoe Creek tinfield, although, so far, it has been worked in the usual slipshod way. The production of tin in 1912 amounted to 271 tons, of which 100 tons were obtained at Burrundie, 40 tons at Horseshoe Creek and Mount Todd, 30 tons at Umbrawarra, and 21 tons at the West Arm and Bynoe Harbour.

3. **World's Production of Tin.**—According to "The Mineral Industry" the world's production of tin during each of the last five years was obtained as follows:—

THE WORLD'S TIN SUPPLIES, 1908 to 1912.

Country in which Smelted.	1908.	1909.	1910.	1911.	1912.
	Tons.	Tons.	Tons.	Tons.	Tons.
Australia	6,700	6,450	5,500	5,150	5,130
Austria-Hungary	39	52	89	16	14
Banka, Sales in Holland	11,710	12,150	13,631	15,147	16,111
Billiton, Sales in Holland and Java	2,270	2,280	2,240	2,240	2,243
Bolivia, Exports to England	1,174	834	1,003	464	552
China, Exports	4,836	4,516	6,510	6,056	8,785
France	...	...	...	500	500
Germany, mainly Bolivian ores	6,374	8,995	11,394	12,426	12,500
Japan	26	23	23	155	175
Straits Settlements, Exports	63,690	61,540	57,490	57,944	61,528
United Kingdom, domestic ores	5,133	5,282	4,874	4,950	5,061
United Kingdom, imported ores	11,614	11,890	13,055	13,850	13,600
Total (metric tons)	113,566	114,012	115,759	118,898	126,199

The totals are exclusive of output from the native smelters in Central and South Africa, exports from Siam and the Dutch East Indies to India, China, Korea and Japan, and local consumption in Straits Settlements, Siam, and Dutch East Indies, omissions in these and a few other cases being due to lack of returns.

4. **Prices of Tin.**—The average price of the metal in the London market for the year 1897 and from 1902 to 1912 was as follows:—

PRICE PER TON OF TIN, 1897 to 1912.

Year.	Price per Ton.	Year.	Price per Ton.
	£ s. d.		£ s. d.
1897	61 8 0	1907	172 12 9
1902	120 14 5	1908	133 2 6
1903	127 6 5	1909	134 15 6
1904	126 14 8	1910	155 6 2
1905	143 1 8	1911	192 7 0
1906	180 12 11	1912	209 8 5

According to "The Mineral Industry" the maximum price obtained for tin during the period 1897-1912 was reached in October, 1912, when the metal was quoted at £228 9s. 1d. per ton.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining in 1901 and during the last five years is shewn below:—

PERSONS ENGAGED IN TIN MINING, COMMONWEALTH, 1901 and 1908 to 1912.

Year.	N.S.W.	Victoria.	Qld.	W. Aust.	Tas.	Nor. Ter. C'wealth.
	No.	No.	No.	No.	No.	No.
1901	1,428	...	1,148	413	1,065	...
1908	2,456	53	2,140	614	1,588	384
1909	2,037	48	2,158	406	1,576	355
1910	2,028	25	1,932	326	1,598	322
1911	2,225	34	1,860	321	1,755	280
1912	2,646	57	2,153	409	1,762	287

§ 7. Zinc.

1. **Production of Zinc.**—The production of spelter is practically confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores.

Gratifying results have been achieved in the work of the profitable extraction of the zinc contents of the large heaps of accumulated tailings and from the ore raised on the Broken Hill field. The year 1909 witnessed the passing of this problem out of the experimental stage, and the practical solution of the difficulty which had confronted the mining companies for many years. At present not only is the zinc being obtained in a marketable form, but the silver and lead contents are being turned to profitable account. During 1912 the various process plants on the field were all in continuous operation, and improvements were effected tending towards simplicity of construction and increased capacity. In 1899 the exports of zinc (spelter and concentrates) amounted to 49,879 tons; in 1909 they totalled 373,906 tons, valued at £1,041,280; and in 1912, 520,518 tons, valued at £1,766,242, the great bulk of the production being obtained from tailings. The following table shews the production of zinc in New South Wales from 1889 to 1912:—

NEW SOUTH WALES.—PRODUCTION OF ZINC, 1889 to 1912.

Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value.	Year.	Quantity of Zinc (Spelter and Concentrates) Produced.	Value
	Tons.	£		Tons.	£
1889	97	988	1909	373,906	1,041,280
1891	219	2,622	1910	468,627	1,289,634
1899	49,879	49,207	1911	516,378	1,414,980
1908	276,720	600,883	1912	520,518	1,766,242

The total quantity of zinc (spelter and concentrates) produced in New South Wales to the end of the year 1912 was 2,819,718 tons, valued at £7,539,913. The average price of spelter per ton in the London market during the last seven years was £23 19s. 8d., ranging from £20 3s. 3d. in 1908 to £27 0s. 5d. in 1906. The price in 1912 was £26 8s. 5d.

At the Silver Spur mine at Texas, in the Stanthorpe division in Queensland, part of the ore is high in zinc and lead, but low in silver. Profitable extraction of the zinc and lead depends, however, on railway connection with the mine.

During the year 1912, 14 tons of zinc, valued at £217, were raised in Western Australia.

The zinc contents of the ores treated by the Tasmanian Smelting Company at Zeehan were stated to have amounted to 12,000 tons for the year ended June, 1913.

§ 8. Iron.

1. **General.**—The fact that iron-ore is widely distributed in the Commonwealth has long been known, and extensive deposits have been discovered from time to time at various places throughout the States. It will appear, however, from what is stated below, that until quite recently, little has been done in the way of converting these deposits into a marketable commodity.

(i.) *The Manufactures Encouragement Act 1908-12.* It was hoped that the passing by the Commonwealth Parliament of the Manufactures Encouragement Act, which came into force on the 1st January, 1909, would assist in firmly establishing the iron industry in Australia on a remunerative basis, both in the smelting of pig iron and in the production of bar iron and steel from Australian ore. The Act referred to, together with its amendment in 1912, provides for the payment of bounties on iron in accordance with the terms set out hereunder :—

BOUNTIES PAYABLE ON AUSTRALIAN PIG IRON, BAR IRON, STEEL, Etc.

Description of Goods	Rate of Bounty.	Total Amount which may be authorised.	Date of Expiry of Bounty.
CLASS 1.			
Pig iron made from Australian ore	12s. per ton	£150,000	30th June, 1914
Puddled bar iron made from Australian pig iron,	„		
Steel made from Australian pig iron	„		
CLASS 2.			
Galvanised sheet or plate iron or steel (whether corrugated or not) made from Australian ore	10 per cent. on value	£30,000	30th June 1914
Wire netting, not being prison made and being made from Australian ore or from wire manufactured in the United Kingdom	10 per cent. on value		
Wire made from Australian ore			
Iron and steel tubes or pipes (except riveted or cast), not more than six inches internal diameter, made from Australian pig iron or steel	10 per cent. on value		

Particulars of the bounties paid under the above Act during the half-year ended the 30th June, 1909, and during the financial years 1909-10 to 1912-13, are shewn in the following statement:—

**PARTICULARS OF BOUNTIES PAID ON AUSTRALIAN PIG IRON, BAR IRON,
STEEL, Etc., 1909 to 1913.**

Description of Goods.	Steel made from Australian Pig Iron.	Puddled Bar Iron made from Australian Pig Iron.	Pig Iron made from Australian Ore.	Galvanised Sheet Iron made from Australian Ore.	Wire netting made from wire manufactured in the United Kingdom	Total.
	£	£	£	£	£	£
Half-year ended 30th June, 1909	575	568	2,314	192	...	3,649
1909-10	1,491	1,254	23,510	287	6,086	32,578
1910-11	1,940	2,080	20,462	121	4,824	29,427
1911-12	723	671	15,611	74	5,968	23,047
1912-13	...	38	16,949	...	1,110	18,097
Total	4,729	4,611	78,846	674	17,938	106,798

So far New South Wales is the only State where bounty has been claimed, and the above figures, taken in conjunction with those in the succeeding table, show that production has not been as rapid as might have been expected.

2. Production of Iron.—(i.) *New South Wales.* Reference to the extent of the deposits of iron ore in the State, and the events leading up to the establishment of ironworks at Lithgow, will be found in earlier issues of the Year Book (see No. III., p. 508). During 1912 the following materials were received at the blast furnace:—Iron ore, 55,170 tons; limestone, 20,399 tons; and coke, 51,102 tons. The output was 36,277 tons of pig iron. No steel ingots were made during the year.

The Broken Hill Proprietary Company has obtained the necessary powers, and proposes to undertake the manufacture of iron and steel on a large scale at Newcastle. It is estimated that the plant and works will be in operation in about two years.

The following table shews the quantity and value of finished iron, pig iron, etc., made in New South Wales during the last seven years, chiefly from scrap iron, but since 1908 partly from the smelting of iron ore:—

NEW SOUTH WALES.—PRODUCTION OF IRON, 1906 to 1912.

Particulars.	1906.	1907.*	1908.†	1909.‡	1910.§	1911.§	1912.§
Quantity Tons	8,000	29,902	40,207	29,762	40,487	36,354	32,677
Value ... £	112,848	178,632	118,224	106,357	161,948	145,416	130,708

* Includes 18,631 tons pig iron, valued at £60,550, produced from 34,500 tons of iron ore raised within the State. † Includes 30,393 tons pig iron, valued at £98,777, from 51,206 tons of ore raised within the State. ‡ Includes 26,762 tons pig iron, valued at £100,357, from 46,740 tons of iron ore raised within the State. § From ore raised within the State.

The bounty paid in 1911 and 1912 on iron and steel made from ores mined in New South Wales was as follows:—

BOUNTY PAID ON IRON AND STEEL, NEW SOUTH WALES, 1911 and 1912.

Description.	1911.		1912.	
	Tonnage.	Bounty.	Tonnage.	Bounty.
		£		£
Pig iron	24,658	14,795	31,104	18,663
Puddled bar iron	1,789	1,073	549	329
Steel	2,633	1,580	...	...
Total	29,080	17,448	31,653	18,992

A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, the output in New South Wales being drawn chiefly from the deposits at Port Macquarie, while smaller quantities are obtained from Mittagong and Goulburn. During 1912 the quantity raised was 3757 tons, valued at £4763, while the total output to the end of that year was 23,696 tons, valued at £30,747. The quantity of ironstone disposed of for flux is decreasing, since the requirements of the smelting companies have fallen off, owing to suitable ores being obtained. In 1912 the quantity raised was 1093 tons, valued at £761, as against 1216 tons, valued at £861, in the preceding year.

(ii.) *Victoria.* Iron ore has been located at various places in Victoria, particularly at Nowa Nowa, in the Gippsland district, and at Dookie. A blast furnace was erected in 1881 near Lal Lal, on the Moorabool River, and some very fair quality iron was produced, which was used for truck wheels and stamper shoes in the Ballarat mines. The fall in the price of the metal, however, led to the closing of the works. In his report for 1905 the Secretary for Mines states that without special assistance to the industry there does not seem to be any prospect of the deposits being profitably worked.

(iii.) *Queensland.* Queensland possesses some extensive deposits of iron ore, which is mined chiefly for fluxing purposes in connection with the reduction of gold and copper ores. During the year 1912, 15,526 tons of ironstone, valued at £9035, were raised, the bulk of the production being in the Chillagoe and Cloncurry districts.

(iv.) *South Australia.* In South Australia iron ore is raised for fluxing purposes only, although the State possesses some rich deposits capable of being mined for an indefinite period. The best known deposit is the Iron Knob, a veritable hill of iron of high percentage, situated about forty miles W.S.W. from Port Augusta. The estimated quantity of iron ore in sight at the Iron Knob and Iron Monarch has been set down at 21,000,000 tons. The Broken Hill Company intends to treat ore from this quarry at its ironworks at Newcastle, New South Wales.

(v.) *Western Australia.* This State has some very rich deposits of iron ore, but owing to their geographical position, the most extensive fields at the present time are practically unexploited, the production in the State being confined chiefly to that needed for fluxing purposes. The Murchison field possesses some extensive deposits of high-grade ore. There are also deposits on Koolan Island at Yampi Sound.

(vi.) *Tasmania.* The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June, 1876. Unfortunately, however, the presence of chromium rendered the pig iron so hard and brittle that the works had to be abandoned. Extensive deposits of specular iron ore are also found in the neighbourhood of the Blythe and Gawler Rivers. The total production of iron ore in 1908 was 3600 tons, valued at £1600, and

was all raised by the Tasmanian iron mine at Penguin, but owing to the closing down of that mine in 1909, there has been no further production. Iron pyrites for the manufacture of sulphuric acid and of manures, is produced on the West Coast.

(vii.) *Northern Territory.* Boulders of pure hematite have been found in the country between Eureka and Pine Creek, and it is stated by the Director of Mines that these are probably derived from large accretions in the neighbouring mountains.

(viii.) *World's Production of Iron, 1911.* The quantity of iron produced in Australia is but a very small proportion of the world's production, which in 1911 amounted to 63,252,000 metric tons (pig iron). The leading position for magnitude of production is held by the United States, which in 1911 produced 24,028,000 tons, compared with Germany's 15,280,000 tons, and the United Kingdom 9,875,000 tons. The position of the three countries named is similar to what it has been for several years past.

§ 9. Other Metals.

1. **Antimony.**—This metal is widely distributed in New South Wales, and has been found native at Lucknow, near Orange. Dyscrasite, a silver antimonide, has been found in masses up to one ton in weight in the Broken Hill lodes. Antimony is also obtained in the Hillgrove district, and deposits are being worked in the Port Macquarie Division and at Yulgilbar in the Copmanhurst Division. Deposits are occasionally worked in the Macleay and Bellinger River Districts when market values afford a margin of profit. It has also been found at various places in Victoria, chiefly in association with gold. In 1912 the export of antimony metal and ore from New South Wales amounted to £355. The total quantity of antimony ore raised in New South Wales up to the end of 1912 was 16,654 tons, valued at £305,224. The production of antimony ore in Victoria during 1912 amounted to 2430 tons, valued at £16,162. The ore was raised by a syndicate operating at Costerfield. In Queensland extensive deposits were discovered at Neerdie, in the Wide Bay district, during 1872, also at Wolfram Camp on the Hodgkinson field, on the Palmer River, in the Ravenswood district, and on the Mitchell River in the Herberton district. In Western Australia lodes of stibnite carrying gold have been found in the Roeburne district.

2. **Arsenic.**—In the form of arsenopyrite, arsenic is of wide distribution in Victoria, but the deposits are worked to a limited extent only. At Ballarat a small quantity of the oxide is obtained from the flues of roasting furnaces. In New South Wales about 200 tons of arsenic were obtained in 1910 by the Conrad Mines Ltd. at Howell.

3. **Barium.**—A valuable lode of barium sulphate has been discovered near Dalwin, on the North Lyell railway, in Tasmania, and it is proposed to develop the deposit. It is stated that the lode is from $2\frac{1}{2}$ to 7 feet wide over a length of over 40 chains.

4. **Bismuth.**—This metal has been found in New South Wales, near Glen Innes, and also in the vicinity of Pambula, its discovery dating from 1877. About 6 tons of metal and ore, valued at £1210, were exported from New South Wales during 1912; the total quantity exported to the end of that year was 541 tons, valued at £128,537. In Queensland wolfram, molybdenite, and bismuth have been found in various districts, but the chief centres of production in 1912 were the Herberton and Chillagoe fields. The total production in 1912 was valued at £77,082, of which £57,821 was returned as wolfram, £2835 as bismuth, and £16,426 as bismuth and wolfram. In South Australia deposits are found at Balhannah, at Mount Macdonald, and at Murninnie, on the shores of Spencer's Gulf. In Tasmania 7 tons, valued at £2606, were raised in 1912 by the Shepherd and Murphy mine at Middlesex.

5. **Chromium.** In New South Wales chromium is found at Bowling Alley Point, on the Peel River, at Barraba, at Gordon Brook, in the Clarence River district, at Bingara, Wallendbeen, and near Gundagai. The production during recent years has been trifling. The total exports to the end of 1912 amounted to 30,835 tons, valued at £101,468. Chrome iron ore is found in Queensland in the Rockhampton district, where the Elgalla mine, at Cawarral, produced a small quantity in 1911. There was also some production from the mine near Broadmount.

6. **Carnotite.**—A discovery of carnotite ore was made in 1906 twenty miles E.S.E. from the Olary railway station in South Australia. (See also "Radium.")

7. **Cobalt.**—This metal was found at Carcoar in New South Wales in 1889, and subsequently at Bungonia, Port Macquarie, and various other places. There was no export of cobalt in 1912, and the total produced since 1860 amounted in value to only a little over £8000. Deposits have been noted in South Australia near Bimbourie, and South Blinman; in Western Australia at Norseman and Kanowna; and at various places in Victoria.

8. **Lead.**—This metal was first noted in New South Wales in 1849, when small specimens of native metal were found by the Rev. W. B. Clarke. At present lead mining *per se* is not practised to any extent in the Commonwealth, the supply of the metal being chiefly obtained in conjunction with silver. In New South Wales the lead contents of the bullion produced within the State amounted in 1912 to 17,251 tons, valued at £264,590. The total lead production to the end of 1912 was 138,192 tons, valued at £2,000,911. In Victoria oxides, sulphides, and carbonates of lead are found in the reefs of most of the goldfields. The deposits are not, however, of sufficient extent to repay the cost of working. In Queensland the deposits are worked chiefly for the silver, copper or gold contents of the ore, the lead produced in 1912 amounting to 3108 tons, valued at £55,667, of which 1956 tons, valued at £35,938, were produced from the mines in the Chillagoe district, 689 tons, valued at £11,713, from Herberton, and 204 tons, valued at £3729, from the Etheridge district. Lead ore to the value of £22,565 was exported from Western Australia in 1912. Complete information is not available as to the lead contents of Tasmanian silver lead ores. At one time South Australia produced a fair amount of lead, £22,303 worth being raised in 1902, but the production rapidly decreased, there having been no output for the last two years.

9. **Mercury.**—In New South Wales mercury was first recorded by the Rev. W. B. Clarke in 1841. Cinnabar has been found in lodes and impregnations at various places, such as Bingara, Clarence River, etc. Up to the present the production of quicksilver has been small, the total being only a little over 1000 lbs. In Victoria native mercury and cinnabar have been found at Silver Creek, a tributary of the Jamieson River. Lodes of cinnabar have been found in Queensland at Kilkivan, and at Black Snake, in the Wide Bay district; about four tons were produced between 1824 and 1891. Between O. K. and Mungana several shows have been prospected with encouraging results. Small quantities have been found disseminated over a large area near Willunga in South Australia.

10. **Manganese.**—Ores of this metal occur in widely separated districts in New South Wales, but the low price of the metal precludes mining to any great extent, and the production to date has been trifling. In Queensland there are extensive deposits at Mount Miller, at Gladstone, and Mount Nansen, near Gympie, the product being utilised chiefly by the Mount Morgan mine. The production from the Mount Miller mine amounted in 1912 to 308 tons of ore, valued at £1281. Small quantities of manganese ore were raised in Victoria during 1912 from mines in the vicinity of Heathcote. Extensive deposits of the ore were mined at Boolconda in South Australia some years

ago, but latterly the production has ceased. Deposits have also been noted at Kangaroo Island, Quorn, Tumby, and various other parts of the State. In Western Australia ores of the metal are found widely scattered, the black oxide being especially plentiful in the Kimberley district.

11. Molybdenum.—In New South Wales molybdenite (associated with bismuth) is obtained at Kingsgate, near Glen Innes, at Deepwater, and at Whipstick, in the Pambula division, the export in 1912 being 57 tons, valued at £3706, as compared with 20 tons, valued at £2591, in the previous year. The production in Queensland for 1912 was 102 tons, valued at £17,349, practically the whole of which was contributed by the mines in the Chillagoe field.

12. Radium.—(i.) It is reported that there have been several definite discoveries in Australia of the occurrence of minerals containing radium. The discovery at Olary, in South Australia, of carnotite, which is an alteration product of pitchblende, the compound from which radium is obtained, has already been referred to. In 1910 pitchblende was identified in portion of the workings at Olary, and a specimen, exhibiting a high degree of radio-activity, was obtained. This is the first authentic discovery of the mineral pitchblende in Australia. The deposits of radio-active uranium ores found at Radium Hill are now being mined, and the concentrates forwarded to Sydney for treatment at the company's works at Woolwich. In another case a monazite from Pilbara, Western Australia, has been shewn to give off radium emanations. This mineral has been called "pilbarite." Yet another specimen of mineral having the composition of a secondary pitchblende has been discovered by a prospector. The exact place where this specimen was found is uncertain, but it is believed that it came from the New England district of New South Wales. It is stated that its radio-activity is very marked, the mineral being 1 per cent. more active than the Bohemian variety, and that it contains only such elements as were readily separable from one another by the methods used to obtain pure uranium and radium from Bohemian pitchblende. Lastly, it is stated that the ores obtained at the Moonta mines, South Australia, contain from one-tenth to one-fifteenth of the amount of radium found in high-grade pitchblende, and that a product having a fairly high degree of radio-activity can be extracted therefrom with comparative ease.

(ii.) *Production of Radium Bromide.*—At the end of November, 1912, a small quantity of radium bromide was produced at the Radium Hill Co.'s works at Woolwich, Sydney, this being the first occasion on which a marketable amount of this salt has been obtained outside of Europe. It is estimated by the chemist in charge that the present plant at the works is capable of providing £600 worth of radium weekly.

13. Tungsten.—Wolfram and scheelite, the principal ores of tungsten, are both mined to a small extent in New South Wales. During 1912 the export of wolfram was 172 tons, valued at £16,584, and of scheelite 56 tons, valued at £4963. Wolfram was mined chiefly at Torrington, in the Deepwater division, and scheelite at Hillgrove. A mine near Ormeo, in Victoria, was developed during 1909, and 5 tons of concentrates, valued at £464, were produced during 1912, and 3 tons, valued at £60, produced at Bendoc. In Queensland, tungsten ores are found in several districts, the chief centres of production in 1912 being Chillagoe and Herberton. (See also Bismuth, page 426.) A deposit of wolfram was discovered near Yankalilla in South Australia as far back as 1893, but the production up to date has been small. In the Northern Territory 27 tons of wolfram, valued at £4160, were raised during 1912 in the Wolfram Camp area, and 11 tons, valued at £960, at Yenberrie.

In Western Australia a deposit of wolfram was discovered in the West Kimberley district, about 70 miles to the north-east of Derby; nine tons, valued at £826, were raised during 1911, but there was no production in 1912. Wolfram is mined at various points in Tasmania, the production for 1912 being 66 tons, valued at £6601, obtained chiefly at Avoca and from the Shepherd and Murphy mine at Middlesex. Scheelite has been discovered on King Island in Bass Strait.

14. **Tantalum.**—Tantalite in small quantities has been found in the Greenbushes mineral field of Western Australia for some time past, but recently a lode of fairly extensive proportions was located at the Wodgina tinfield. Up to the end of 1905 the production of this mineral in Western Australia amounted to 73 tons, valued at about £10,000, but early in 1906 it was found that the supply exceeded the demand and production was temporarily stopped; in 1908 a small quantity valued at £400 was exported. About £327 worth was reported as having been raised in the Greenbushes and Pilbara fields during 1909, but none was exported owing to the entire absence of any market. No production was recorded subsequently. Small quantities of the mineral are also found in the Northern Territory.

15. **Uranium.**—This mineral has been discovered in South Australia in the country between Mount Painter and Mount Pitts, about 80 miles east from Farina. The uranium ores occur most frequently in the form of torbernite and autunite, and are found over a considerable area. The discovery is therefore of considerable importance, since ores of this mineral are found to a very limited extent in other parts of the world, and uranium is the chief source from which radium is derived.

In addition to the metals enumerated above there is a large number of others occurring in greater or less degree, while fresh discoveries are being constantly reported.

(B). NON-METALLIC MINERALS.

§ 10. Coal.

1. **Production in each State.**—(i.) *Historical.* A historical account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. III., pp. 515-6.)

(ii.) *New South Wales.* The production in 1912 amounted to 8,885,815 tons, valued at £3,660,015, the highest yet recorded.

(iii.) *Victoria.* During 1912, 593,155 tons of coal were raised, valued at £259,321. Of this total 455,659 tons, valued at £184,056, were raised by the State coal mine at Wonthaggi.

(iv.) *Queensland.* The number of collieries contributing to the output in 1912 was 48, and the quantity of coal raised was 902,166 tons, valued at £338,264, as against 891,568 tons, valued at £323,998, for the preceding year. Thirty-four collieries were working in the Ipswich district, seven on the Darling Downs, and seven in the Central district. The industry is at present in very satisfactory position in the northern State, and owing to the wide area over which the deposits stretch, practically no limit can be set to its possibilities of extension.

(v.) *Western Australia.* Six collieries were in operation on the Collie field during 1912, and the output for the year was 295,079 tons, or about 45,000 tons more than in 1911. The improvement is due to the more general use of up-to-date machinery.

(vi.) *Tasmania.* The principal collieries in Tasmania are the Cornwall and Mount Nicholas, the former producing 22,000 and the latter 30,000 tons out of a total yield in 1911 of 57,067 tons.

The quantity and value of coal produced in each State and in the Commonwealth at various periods since 1881, are shewn in the following table:—

PRODUCTION OF COAL, AUSTRALIA, 1881 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
QUANTITY.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1881	1,769,597	...	65,612	...	...	11,163	1,846,372
1891	4,037,929	22,834	271,603	...	...	43,256	4,375,622
1901	5,968,426	209,329	539,472	...	117,836	45,438	6,880,501
1908	9,147,025	113,962	696,332	...	175,248	51,068	10,193,635
1909	7,019,879	128,673	756,577	...	214,302	66,162	8,185,593
1910	8,193,508	369,709	871,166	...	262,166	82,455	9,759,004
1911	8,691,604	659,998	891,568	...	249,890	57,067	10,550,127
1912	9,885,815	593,155	902,166	...	295,079	53,560	11,729,775
VALUE.							
	£	£	£	£	£	£	£
1881	603,248	...	29,033	...	...	4,465	636,746
1891	1,742,796	19,731	128,198	...	...	17,303	1,908,028
1901	2,178,929	147,228	189,877	...	68,561	18,175	2,602,770
1908	3,353,093	64,778	244,922	...	75,694	24,427	3,762,914
1909	2,618,596	76,945	270,726	...	90,965	26,464	3,083,696
1910	3,009,657	189,254	322,822	...	113,699	48,609	3,684,041
1911	3,167,165	301,141	323,998	...	111,154	26,214	3,929,672
1912	3,660,015	259,321	338,264	...	135,857	24,568	4,418,025

The Victorian figures for 1912 include about 4000 tons of brown coal, the bulk of which was raised at Altona.

2. Distribution and Quantity of Coal in each State.—(i.) *New South Wales.* Estimates have from time to time been made as to the total quantity of coal available for working in the deposits in New South Wales, and while these naturally differ to some extent, they agree in placing the amount at well over a thousand million tons, without taking into consideration the deposits existing below a depth of 4000 feet. According to Mr. E. F. Pittman, the coal-bearing rocks of New South Wales may be classified as follows:—

COAL-BEARING ROCKS OF NEW SOUTH WALES.

Geological Age.	Maximum Thickness of Coal-bearing Strata.	Locality.	Character of Coal.
I. Tertiary—Eocene to Pliocene	Approx. 100 ft.	Kiandra, Gulgong, and Chouta Bay	Brown coal or lignite.
II. Mesozoic—Triassic or Trias-Jura	2,500 „	Clarence and Richmond Rivers	Coal suitable for local use only.
III. Palæozoic—Permo-Carboniferous	13,000 „	Northern, Southern and Western Coalfields	Good coal, suitable for gas, household and steaming.
IV. Palæozoic—Carboniferous	10,000 „	Stroud, Bullah Dellah.	Very inferior coal with bands; of no value.

In regard to the Tertiary deposits, it may be noted that no serious attempt has been made to use the coal as fuel in New South Wales. At Kiandra a deposit of lignite was found to possess a maximum thickness of 30 feet, but as a general rule the seams vary from 3 to 4 feet in thickness. The Triassic or Trias-Jura deposits in the Clarence and Richmond districts contain numerous seams, but the coal is largely intersected by bands, while its large percentage of ash renders it unfit for use as fuel for industrial purposes. These beds extend under the great western plains but the presence of artesian water

precludes the possibility of their being worked. The Clarence basin extends into Queensland, and at Ipswich thick and valuable seams of coal are worked. It is in the Permo-Carboniferous division that the great productive coal seams of the State are found, the area which they cover being estimated at about 16,550 square miles. The deepest part of the basin is somewhere in the vicinity of Sydney, where the "Sydney Harbour Colliery" is working the top seam at a depth of 2884 feet. Towards the north, south and west the seams rise towards the surface, and outcrop in the neighbourhood of Newcastle, Bulli and Lithgow. The coal from the various districts embraced in this division differs considerably in quality—that from the Newcastle district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of fifteen miles, is now the most important coal mining district in Australasia. The Permo-Carboniferous measures have in various places been disturbed by intrusions of volcanic rocks, which in some instances have completely cindered the seams in close proximity to the intrusive masses, while in other instances the coal has been turned into a natural coke, some of which has realised good prices as fuel.

The table hereunder gives the yields from the various divisions at intervals from 1881 to 1912:—

COAL RAISED IN NEW SOUTH WALES, 1881 to 1912.

District.	1881.		1901.		1905.		1912.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
Northern ...	1,352,472	437,270	3,999,252	1,669,519	4,645,742	1,473,995	6,913,810	2,798,764
Southern ...	253,283	115,505	1,544,454	407,196	1,556,678	421,768	2,172,800	661,512
Western ...	163,842	50,473	424,720	102,214	429,718	107,698	799,205	199,739
Total ...	1,769,597	603,248	5,968,426	2,178,929	6,632,138	2,003,461	9,885,815	3,660,015

Sydney Harbour Colliery. This colliery possesses considerable interest from the circumstance that its workings are amongst the deepest in the world. Extended reference to the history of its opening will be found in preceding Year Books. (See No. VI., page 504.)

(ii.) *Victoria.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district.

Deposits of brown coal and lignite of immense extent occur in gravels, sands, and clays of the Cainozoic period throughout Gippsland, Mornington Peninsula, Werribee Plains, Gellibrand, and Barwon and Moorabool basins. In the Latrobe Valley the beds reach a thickness of over 800 feet. When dried, the material makes good fuel, but owing to its excessive combustibility and friability requires to be consumed in specially constructed grates. Attempts have been made to manufacture briquettes from the brown coal, but so far without any great measure of success. At the Melbourne and Altona Colliery Company's mine at Altona, 3942 tons of brown coal, valued at £850, were raised in 1912.

The output of coal from the chief Victorian collieries during the last ten years was as follows:—

PRODUCTION OF COAL IN VICTORIA, 1903 to 1912.

Year.	State Coal Mine.	Outtrim Howitt Company	Jumbunna Coal Company	Coal Creek Proprietary.	Silkstone Co-operative Company	Austral Coal.	Other Companies.	Total Production.	Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1903	...	20,602	18,517	20,727	4,354	...	5,661	69,861	43,645
1904	...	57,328	39,364	22,547	2,014	...	489	121,742	70,208
1905	...	71,989	49,009	27,710	1,624	...	4,804	155,136	79,060
1906	...	74,812	64,222	13,214	3,977	...	4,406	160,631	80,283
1907	...	64,083	61,755	3,762	7,565	...	1,470	138,635	79,706
1908	...	47,633	58,552	...	6,967	...	810	113,962	64,778
1909	2,946	44,156	65,945	3,265	...	10,631	1,730	128,673	76,945
1910	201,053	46,832	61,954	10,968	...	36,052	13,050	369,909	189,254
1911	506,059	28,359	57,397	4,589	...	34,607	28,987	659,998	301,141
1912	455,659	24,326	53,306	4,829	...	31,506	23,529	593,155	259,321

Included in the total "for other companies" is an amount of 16,108 tons raised by the Powlett North Woolamai Collieries. The figures also include about 4000 tons of brown coal, the bulk of which was raised at Altona.

(iii.) *South Australia.* The coal from Leigh's Creek in South Australia is subject to similar disabilities to the Victorian brown coal, and until some means are devised of overcoming these, production will probably languish.

(iv.) *Queensland.* In Queensland the coal-bearing strata are of vast extent and wide distribution, being noted under the greater portion of the south-eastern districts, within 200 miles of the sea, as far north as Cooktown, and under portions of the far western interior. The Ipswich beds are estimated to occupy about 12,000 square miles of country, while the Burrum fields occupy a considerably larger area. At Callide, fifty miles west of Gladstone, a seam of coal free from bands has been struck in a shaft only sixty feet deep, and borings have proved the deposit to be of considerable magnitude. The beds in the Cook district are estimated to comprise rather more than 1000 square miles, but coal measures extend to the south-west far beyond Laura and to the north of the railway. Extensive beds occur in the basin of the Fitzroy River, in the Broomsound district, and at the Bowen River. Amongst other places where the mineral is found may be enumerated Clermont, the Palmer River, Tambo, Winton, Mount Mulligan, and the Flinders River. Boring operations have proved the existence of seams of workable coal for some distance on both sides of the Dawson River. A bituminous coal is yielded by the Ipswich seams, those of the Darling Downs yield a cannel, while anthracite of good quality is furnished by the Dawson River beds.

The quantity and value of coal raised in Queensland at various periods since 1861 were as shewn below:—

PRODUCTION OF COAL IN QUEENSLAND, 1861 to 1912.

Year ...	...	...	...	1861.	1871.	1881.	1891.	1901.	1912.
Quantity	...	Tons		14,212	17,000	65,612	271,603	539,472	902,166
Value	...	£		9,922	9,407	29,033	128,198	189,877	338,264

At present coal mining in Queensland is in a very satisfactory position, the increasing volume of the trade being chiefly due to the action of the Government in granting concessions to vessels coaling at local ports.

The distribution of production during the last two years was as follows:—

QUEENSLAND COLLIERIES, 1911 and 1912.

Collieries.	1911.		1912.	
	Tons Raised.	Average Value at Pit's Mouth.	Tons Raised.	Average Value at Pit's Mouth.
Ipswich	624,071	s. d. 6 5	598,505	s. d. 6 7
Darling Downs	85,112	8 5	90,966	8 6½
Wide Bay and Maryborough	98,827	10 10	119,732	10 10½
Rockhampton	16,233	10 4½	13,462	10 6
Clermont	67,325	7 6	79,501	7 6
Total	891,568	7 3	902,166	7 6

Of the total production in 1912, 299,055 tons, or nearly one third, were shipped as bunker coal.

(v.) *Western Australia.* The coal seams in Western Australia belong to the Carboniferous, Mesozoic, and Post-tertiary ages. Most of the coal contains a large proportion of moisture, and belongs partly to the hydrous bituminous and partly to the lignite class. The only coalfield at present worked is at Collie, in the Mesozoic beds of the south-west. The coal produced is bright and clean, but very fragile when free from moisture. The increased output for the last few years is partly due to the establishment of a bunkering trade at Bunbury and Fremantle, and partly to the employment of improved machinery. The production from this field since 1901 was as follows:—

PRODUCTION OF COAL IN WESTERN AUSTRALIA, 1901 to 1912.

Year	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Quantity Tons	117,836	149,755	142,373	175,248	214,302	262,166	249,890	295,079
Value £	68,561	57,998	55,158	75,694	90,965	113,699	111,154	135,857

(vi.) *Tasmania.* In Tasmania coal occurs in the following geological periods:—
 (1) Permo-Carboniferous: Lower Coal Measures. (2) Mesozoic: Upper Coal Measures.
 (3) Tertiary: Brown Coal and Lignite deposits. Permo-Carboniferous coal is found at Avoca, Mt. Nicholas and Fingal, Thomson's Marshes, Langloh, Seymour, York Plains, Mike Howe's Marsh, Longford, Colebrook, Schouten Island, Spring Bay and Prosser's Plains, Compton and Old Beach, Lawrenny, Longhole, Sandfly, Ida Bay, Hastings and Southport, Recherché and South Coast, Tasman's Peninsula. Deposits of lignite and brown coal are plentiful in beds of Tertiary age, but they have not been exploited to any extent. An estimate gives the approximate quantity of coal available as sixty-five million tons, of which eleven millions are in the Lower Coal Measures and fifty-four millions in the Upper Measures, exclusive of an unknown quantity in strata fringing the Central Tiers.

PRODUCTION OF COAL IN TASMANIA, 1901 to 1912.

District.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
North-western ...	2,952	1,878	1,045	...	1,543	1,720	1,496	956
Eastern ...	37,239	46,803	53,214	55,539	57,227	71,115	54,296	51,205
Midland ...	1,536	393	624	...	560	721	635	679
South-eastern ...	...	1,483	4,008	5,529	6,832	8,899	640	720
South-western ...	3,711	2,339						
Total ...	45,438	52,896	58,891	61,068	66,162	82,455	57,067	53,560

The bulk of the output in 1912 was raised from the Cornwall and Mt. Nicholas mines, which produced 22,353 and 28,717 tons respectively.

3. **Production of Coal in Various Countries.**—The total known coal production of the world in 1911 amounted to about 1140 million tons (exclusive of brown coal or lignite), towards which the Commonwealth contributed 10 million tons, or less than 1 per cent. The following table shows the production of the British Empire and the chief foreign countries in units of 1000 tons in 1901 and during each of the years from 1907 to 1911:—

COAL PRODUCTION, BRITISH EMPIRE, 1901 and 1907 to 1911.

Year.	United Kingdom.	British India.	Canada.	Australian Commonwealth.	New Zealand.	Union of S. Africa.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	219,047	6,636	5,791	6,881	1,228	712
1907 ...	267,831	11,147	9,385	9,681	1,831	2,766
1908 ...	261,529	12,770	9,720	10,194	1,861	5,137
1909 ...	263,774	11,870	9,376	8,186	1,911	5,534
1910 ...	264,433	12,047	11,526	9,759	2,197	6,351
1911 ...	271,899	12,716	11,082	10,550	2,066	6,780

COAL PRODUCTION, FOREIGN COUNTRIES, 1901 and 1907 to 1911.

Year.	Russian Empire.	Sweden.	German Empire.	Belgium.	France.	Spain.	Austria-Hungary.	Japan.	United States.
	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.	1000 tons.
1901 ...	16,215	268	106,795	21,856	31,126	2,609	12,895	8,885	261,875
1907 ...	25,583	300	140,885	23,324	35,411	3,637	14,881	13,656	428,896
1908 ...	25,487	300	145,296	23,179	36,044	3,823	14,843	14,587	371,288
1909 ...	26,232	243	146,397	23,140	36,519	3,799	14,868	14,806	411,432
1910 ...	24,460	298	150,372	23,532	37,030	3,751	14,834	15,429	447,854
1911 ...	22,824	307	158,164	22,683	38,023	...	15,000	15,763	443,025

Including New Zealand the production from Australasia takes second place amongst the possessions of the British Empire, British India coming first in order.

4. **Export of Coal.**—The exports of coal from the Commonwealth are practically confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported from the Commonwealth to other countries in 1912 was 2,152,385 tons, valued at £1,147,013, of which amount 2,153,600 tons, valued at £1,145,545, were exported from New South Wales. The quantity of bunker coal taken by overseas vessels was 1,670,841 tons, of which 1,388,000 tons were taken from New South Wales.

In the following table will be found the quantity and value of the exports at decennial intervals since 1881 and during the last five years. The figures for New South Wales are given on the authority of the Mines Department of that State, and include both bunker coal and coal exported from New South Wales to other States of the Commonwealth:—

EXPORTS OF NEW SOUTH WALES COAL, 1881 to 1912.

Year.	1881.	1891.	1901.	1907.	1909.	1910.	1911.	1912.
Quantity ... 1000 tons	1,030	2,514	3,471	5,744	4,394	4,690	5,024	6,053
Value ... £1000	417	1,307	1,682	2,662	2,234	2,459	2,664	3,233

The principal oversea countries to which coal was exported from New South Wales during the year 1912 were as shown hereunder. The quantity and value refer strictly to exports, and exclude bunker coal:—

DESTINATION OF NEW SOUTH WALES OVERSEA EXPORTS OF COAL, 1912.

Country.	Quantity.	Value.	Country.	Quantity.	Value.
	Tons.	£		Tons.	£
Chile ...	850,017	463,231	Peru ...	65,447	32,644
Philippine Islands...	104,570	54,932	Hawaii...	61,979	31,782
Straits Settlements	113,376	62,005	United States	103,609	55,580
Fiji ...	30,256	14,756	India ...	123,330	62,045
New Zealand ...	387,391	209,505	Java ...	211,316	105,905

The quantity of bunker coal taken from New South Wales by oversea vessels was about 1,388,000 tons, valued at £775,000.

The distribution of the total output from New South Wales collieries during the last five years was as follows; the particulars given of amounts exported include coal shipped as bunker coal:—

DISTRIBUTION OF TOTAL OUTPUT OF NEW SOUTH WALES COAL, 1908 to 1912.

Year.	Exports to Australasian Ports.	Exports to other Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1908 ...	2,715,310	3,383,366	3,048,349	9,147,025
1909 ...	2,200,769	2,192,834	2,626,276	7,019,879
1910 ...	2,478,497	2,211,936	3,483,075	8,173,508
1911 ...	2,525,776	2,498,304	3,667,524	8,691,604
1912 ...	3,096,179	2,956,939	3,892,697	9,885,815

The figures quoted above are given on the authority of the New South Wales Mines Department. Owing to the abolition of the record of interstate trade it is impossible to give the quantities forwarded to each of the States of the Commonwealth.

5. **Consumption of Coal in Australia.**—An estimate of the consumption of coal in the Commonwealth may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption of coal in Australia, computed in the manner specified, for the last five years:—

CONSUMPTION OF COAL IN AUSTRALIA, 1908 to 1912.

Year.			Quantity of Coal Consumed.			
			Home Produce.	Produce of the United Kingdom.	Produce of Other Countries.	Total.
			Tons.	Tons.	Tons.	Tons.
1908	...	...	6,087,000	4,000	11,000	6,102,000
1909	...	...	5,367,000	1,000	11,000	5,379,000
1910	...	...	6,897,000	110,000	198,000	7,205,000
1911	...	...	7,407,000	7,000	4,000	7,418,000
1912	...	...	7,907,000	1,500	14,000	7,922,500

The figures for 1910 are, of course, abnormal, the comparatively heavy importation from the United Kingdom and foreign countries being due to uncertainty in the local supply on account of the strike of coal-miners in New South Wales. Of the total importation from foreign countries in that year, India supplied 138,000 tons, and Japan 28,000 tons.

6. **Price of Coal.**—(i.) *New South Wales.* The price of coal in New South Wales has been subject to considerable fluctuation since the date of first production. Up to the end of 1857 the average value of the total output was 11s. 10d. per ton. Next year the value had risen to nearly 15s., declining thereafter until in 1871 the price realised was 7s. From 1872 to 1879 there was a rise in value to 12s. Between 1882 and 1891 the price ranged between 8s. and 10s. From 1891 onwards there was a steady decline until 1898, when the average was 5s. 4d. Henceforward prices rose again until 1902, when 7s. 5d. was the average. A decline then set in until 1905, when the price stood at a little over 6s., followed by a rise of one penny in 1906, and a further rise of eightpence in 1907. In 1908 the average was 7s. 4d., and in 1912, 7s. 5d. per ton. The price of New South Wales coal depends on the district from which it is obtained, the northern (Newcastle) coal always realising a much higher rate than the southern or western product. The average rate in each district during the last five years was as follows:—

PRICE OF COAL IN NEW SOUTH WALES (PER TON), 1908 to 1912.

Year.			Northern District.	Southern District.	Western District.
			s. d.	s. d.	s. d.
1908	...	...	8 0.78	5 10.91	4 5.52
1909	...	...	8 3.48	5 11.91	4 9.34
1910	...	...	8 1.44	6 1.76	5 5.56
1911	...	...	8 0.13	6 1.88	5 0.72
1912	...	...	8 1.15	6 1.06	4 11.98

(ii.) *Victoria.* In Victoria the average price of coal up to the 31st December, 1890, was 19s. 3d. per ton. In 1895 the price was still as high as 12s. 2d., but in the following five years there was a serious decline, the value in 1900 being quoted at 9s. 7d. per ton. In 1901, however, there was an astonishing rise, the figure being as high as 14s. 7d. Since that year, however, the price again declined, the average for 1905 being 10s. 2d.; for 1909, 12s.; for 1911, 9s. 3d.; and for 1912, 8s. 9d. These averages are exclusive of brown coal, the production of which in 1912 was valued at about 4s. 4d. per ton.

(iii.) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows:—

PRICE OF COAL, QUEENSLAND, 1908 to 1912.

District.	Value at Pit's Mouth.				
	1908.	1909.	1910.	1911.	1912.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich ...	6 6 $\frac{1}{4}$	6 8 $\frac{1}{2}$	6 11	6 5	6 7
Darling Downs ...	9 5 $\frac{1}{4}$	9 7 $\frac{3}{4}$	10 5 $\frac{1}{4}$	8 5	8 6 $\frac{1}{2}$
Wide Bay and Maryborough ...	11 7 $\frac{1}{2}$	11 6	11 9	10 10	10 10 $\frac{1}{2}$
Rockhampton ...	...	4 6	8 0	10 4 $\frac{1}{2}$	10 6
Clermont ...	...	...	...	7 6	7 6

(iv.) *Western Australia.* The average price of the Collie (Western Australia) coal up to the end of 1901 was 9s. 4d. per ton, the price in 1901 being 11s. 7d. In 1902 the average stood at 12s. 3d., and from that time the price fell steadily until 1906, when it was 7s. 7 $\frac{1}{2}$ d. per ton. In 1907, the average price was 7s. 8 $\frac{3}{4}$ d.; in 1908, 8s. 7 $\frac{1}{2}$ d.; in 1909, 8s. 5 $\frac{3}{4}$ d.; in 1910, 8s. 8d.; in 1911, 8s. 10d. per ton.

(v.) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania was 8s. in 1901. In 1902 it was 8s. 7d.; in 1903, 8s. 9d.; in 1904 and 1905, 9s. 8d.; in 1906, 9s. 9d.; in 1907, 1908, and 1909, 8s.; in 1910, 11s. 9d.; and in 1911 and 1912, 9s. 2d.

7. Price of Coal in other Countries.—According to a report published by the Board of Trade the average value of coal at the pit's mouth in the five principal coal-producing countries of the world, for the five years ended 1911, was as follows:—

PRICES OF FOREIGN COAL, 1907 to 1911.

Year.	United Kingdom.	Germany.	France.	Belgium.	United States.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1907 ...	9 0	9 8 $\frac{3}{4}$	12 3	13 8 $\frac{1}{2}$	5 11 $\frac{1}{4}$
1908 ...	8 11	10 3 $\frac{1}{2}$	12 11 $\frac{3}{4}$	13 1 $\frac{1}{2}$	5 11 $\frac{3}{4}$
1909 ...	8 0 $\frac{1}{2}$	10 2 $\frac{1}{2}$	12 5 $\frac{1}{2}$	11 8 $\frac{1}{2}$	5 7 $\frac{1}{2}$
1910 ...	8 2 $\frac{1}{4}$	9 11 $\frac{1}{4}$	12 3 $\frac{1}{2}$	11 10 $\frac{1}{4}$	5 10 $\frac{1}{4}$
1911 ...	8 1 $\frac{1}{2}$	9 9 $\frac{1}{4}$	*	12 0	5 10 $\frac{3}{4}$

* Not available.

The price of coal at the pit's mouth in the principal British possessions is averaged by the same authority as follows:—

PRICE OF COAL, BRITISH POSSESSIONS, 1907 to 1911.

Year.	British India.	C'wealth of Australia.	New Zealand.	Canada.	Union of Sth. Africa.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1907 ...	4 8	6 10	10 7	10 8 $\frac{1}{2}$	10 2 $\frac{1}{2}$
1908 ...	5 3	7 4 $\frac{1}{2}$	10 4 $\frac{1}{2}$	10 8	6 9 $\frac{1}{2}$
1909 ...	4 8 $\frac{1}{4}$	7 6 $\frac{1}{2}$	10 10 $\frac{1}{2}$	10 10 $\frac{1}{2}$	6 3 $\frac{1}{2}$
1910 ...	4 1	7 6 $\frac{1}{2}$	11 1 $\frac{1}{2}$	10 8 $\frac{1}{2}$	5 10 $\frac{1}{2}$
1911 ...	3 11 $\frac{1}{4}$	7 5 $\frac{1}{2}$	10 10 $\frac{1}{4}$	10 9	5 8 $\frac{1}{2}$

8. Employment and Accidents in Coal Mining.—The number of persons employed in coal mining in each of the States during the year 1911 is shewn below. The table also shows the number of persons killed and injured, with the proportion per 1000 employed, while further columns are added shewing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations.

Returns published by the Board of Trade, England, give the total known number of persons engaged in mining and quarrying throughout the world as $6\frac{1}{2}$ millions, more than one-half of whom were employed in coal mining, the number in the United Kingdom being 1,033,000; the United States, 725,000; Germany, 694,000; France, 197,000; Belgium, 144,000; Austria, 131,000; and India, 116,000.

Recent returns shew the rate in the United Kingdom in respect of deaths through accidents in coal mines as 1.43, and for the British Empire 1.48 per 1000 persons employed in coal mines. For France the rate is given as 1.17, for Germany 2.30, and the United States 3.35. For foreign countries generally the rate is stated at 2.48 per 1000.

EMPLOYMENT AND ACCIDENTS IN COAL MINING, 1912.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1000 Employed.		Tons of Coal Raised for Each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ...	17,795	30	81	1.70	4.55	330,000	122,000
Victoria ...	1,486	2	19	1.35	12.80	...	31,000
Queensland ...	2,019	...	45	...	22.29	296,000	20,000
Western Australia ...	542	...	58	...	107.00	...	5,000
Tasmania ...	155	...	2	...	13.00	...	27,000
Commonwealth	21,997	32	205	1.05	9.32	367,000	57,000

§ 11. Coke.

1. Production of Coke.—Notwithstanding the large deposits of excellent coal in Australia, there is at the present time a fairly considerable amount of coke imported from abroad, the oversea import during the year 1912 amounting to 15,588 tons, valued at £17,694, the bulk of which came from Germany, and was taken chiefly by South Australia and Western Australia. The table hereunder gives the production in New South Wales during the last five years:—

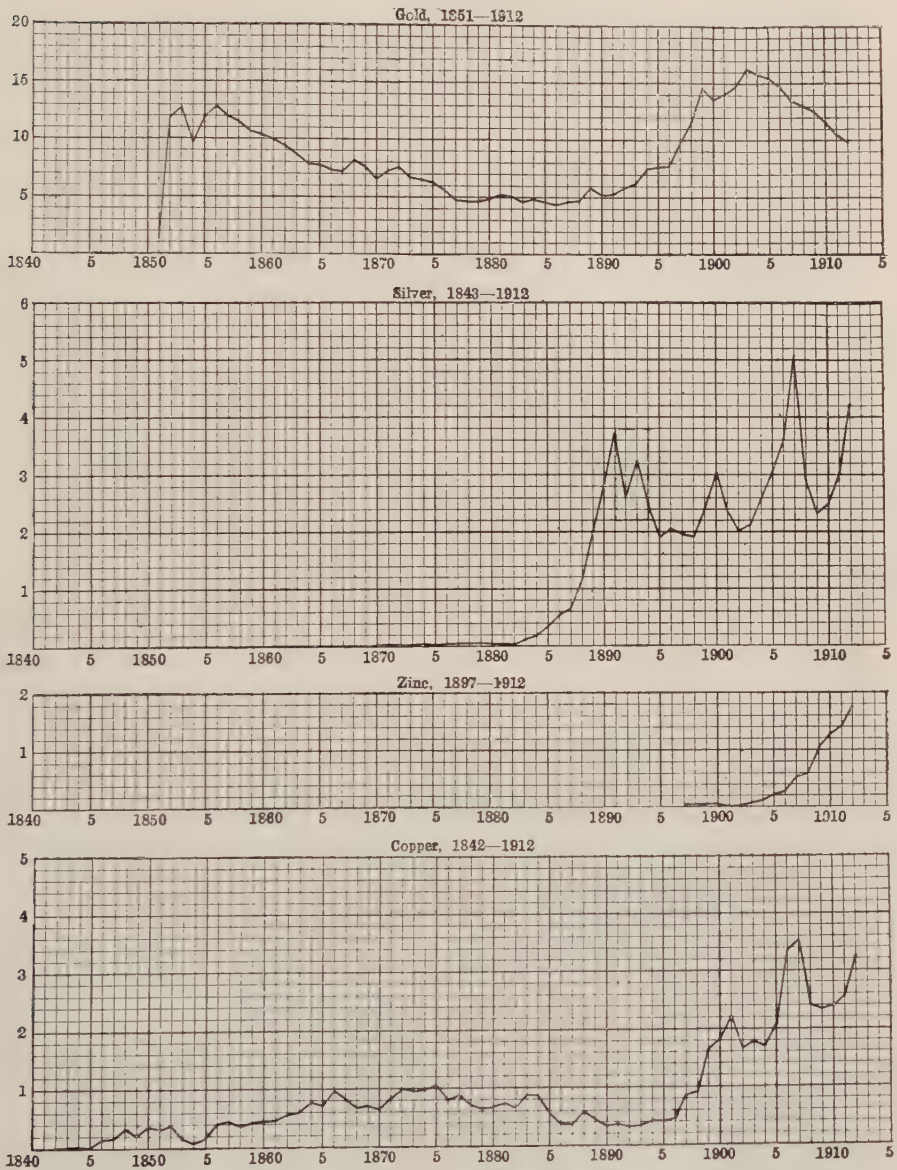
COKE MADE IN NEW SOUTH WALES, 1908 to 1912.

Year.		1908.	1909.	1910.	1911.	1912.
Quantity ...	Tons	283,873	204,274	282,337	264,687	241,159
Value, total ...	£	199,933	137,194	189,069	184,337	162,454
Value per ton ...	...	14s. 1d.	13s. 5d.	13s. 4d.	13s. 11d.	13s. 5d.

The falling-off in the returns for 1909 is, of course, due to the shortage of supplies occasioned by the coal strike.

A small quantity of coke is made in Queensland, but the bulk of that used in ore reduction is imported, mainly from New South Wales. The following table shews the amount manufactured locally, and the amount imported during the last five years; the quantities imported include shipments landed from other States of the Commonwealth.

GRAPHS SHOWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE
COMMONWEALTH, 1842 to 1912.

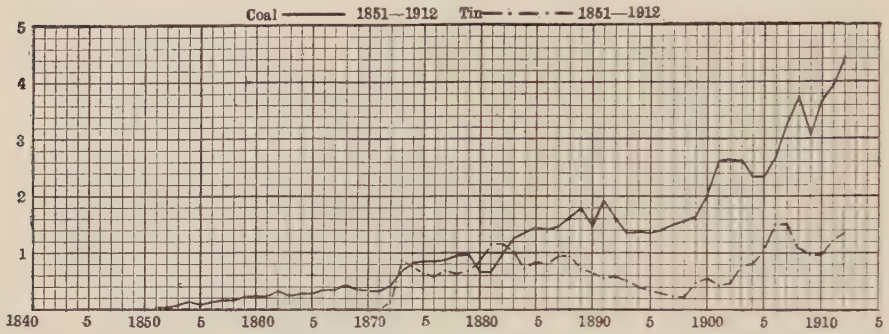


(See pages—for gold, 406; silver, 413; zinc, 422; copper, 417.)

EXPLANATION OF GRAPHS—The values shown in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1842 to 1912.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000, and in the case of silver, zinc and copper £200,000.

GRAPHS SHEWING VALUES OF THE PRINCIPAL MINERALS PRODUCED IN THE
COMMONWEALTH, 1842 to 1912.



(See pages 430 for coal, 420, tin; and 404 total mineral production.)

EXPLANATION OF GRAPHS—The values shown in the above diagrams are those of the total Commonwealth production of certain of the most important minerals in successive years from 1842 to 1912.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

QUEENSLAND—COKE MANUFACTURED LOCALLY AND IMPORTED, 1908 to 1912.

Year.				1908.	1909.	1910.	1911.	1912.
Manufactured locally	...	...	tons	10,684	8,633	11,188	35,025	38,136
Imported	...	...	"	58,804	55,559	*32,054	†	†

* Nine months only. † Not available.

The development in smelting operations in Queensland is reflected in the increased consumption of coke. Of the total production shewn above for 1912, 4539 tons were made in coke works, and the balance at gasworks.

§ 12. Oil Shale and Mineral Oils.

1. **Production of Shale.**—(i.) *New South Wales.* As pointed out by Mr. E. F. Pittman, the name kerosene shale has been rather inaptly applied to a variety of torbanite, cannel, or boghead mineral found at various geological horizons in New South Wales. The mineral does not, as a rule, split in parallel layers, the fracture being rather of a conchoidal type. Pure samples have been found to contain over 89 per cent. of volatile hydro-carbons. The discovery of the mineral in New South Wales dates probably as early as 1802. Its occurrence in the Hartley Vale district was noted by Count Strzelecki in 1845. The mineral has been found at several places in the Upper Coal Measures, and in at least two in the Lower Carboniferous. Production on anything like a large scale commenced in 1868, when about 17,000 tons, valued at £48,000, were raised. The production in 1912 amounted to 86,018 tons, valued at £34,770, as compared with 75,104 tons, valued at £36,980, in 1911. Of the total raised in 1912, 40,185 tons were produced in the Northern District, and 45,833 in the Western District. The large output in the Northern District as compared with the preceding year was due to increased activity of the mine near Murrurundi, owned by the British Australian Oil Company. In the Western District the three producing mines were at New Hartley, Genowlan and Crown Ridge, in the Capertee District.

(ii.) *Victoria.* Up to the present no extensive deposit of oil shale has been located in Victoria.

(iii.) *Queensland.* The discovery of natural gas and traces of oil in a deep bore at Roma has fostered the hope that energetic prospecting will lead to the discovery of mineral oil in quantity in this locality. Oilbearing shales are common in many parts of the State. The deposit at Duaringa on the Central railway line shewed a thickness of 6 feet, and contained about 30 gallons of oil to the ton. Inflammable gas and a little oil have been noted in bores put down for coal on the Dawson River. There are shale deposits at Monduran Creek, near Gladstone, Casuarina Island, Redbank plains in the Ipswich District and Murphy's Creek, near Toowoomba.

(iv.) *South Australia.* In this State large areas of bituminous shale, of which the boundaries are only approximately known, occur at Leigh's Creek and Lake Phillipson. Reference to the mineral known as coorongite is made in sub-section 13. Specimens of bitumen have been discovered on Kangaroo Island, and it was supposed that they were the product of a petroleum-bearing area. The Government Geologist states, however, that the island strata are not of such nature as to support this supposition. In regard to the mainland area it is argued by some investigators that the bores so far put down have not been carried to sufficient depth to fairly test the strata.

(v.) *Western Australia.* A deposit of carbonaceous shale of considerable thickness is known to exist at Coolgardie, but the mineral has not yet been raised in any quantity.

(vi.) *Tasmania.* Tasmanite shale has been discovered in the basins of the Mersey, Don, and Minnow Rivers, and the Government geologist estimates the probable capacity of the beds at 12,000,000 tons. The crude oil content of average quality shale has been estimated at 40 gallons to the ton. A small quantity of shale was raised in 1910, but

there was no production in 1911 or 1912. At present mining for the product is only in the developmental stage, but there is apparently no reason why the industry should not in time become of considerable importance.

(vii.) *Northern Territory*. The existence of oil shale has been reported for many years in the Boroloola district, while several oil licenses have been applied for in the Victoria River district. Experts, however, have pronounced unfavourably on the prospects.

(viii.) *Papua*. An expert has reported that the deposits of oil-bearing shale can be worked at a profit, and oil of a satisfactory quality has been obtained from two comparatively shallow bores.

2. **Export of Shale.**—In 1912 New South Wales exported to New Zealand 285 tons of shale, valued at £720.

3. **Shale Oils Bounties.**—The Shale Oils Bounties Act 1910 provides for the payment of bounties on certain goods manufactured in Australia from Australian shale on or after the 1st July, 1910, and before the 1st July, 1913. The total amount to be made available for bounties under this Act is £50,000. Particulars are given in the following tabular statement :—

COMMONWEALTH SHALE OILS BOUNTIES—AMOUNT PAYABLE.

Description of Goods.	Rate of Bounty.	Maximum Amounts which may be paid during the Financial Year 1910-11.	Maximum Amounts which may be paid during each of the Financial Years 1911-12 and 1912-13.	Date of Expiry of Bounty.
Kerosene* ...	2d. per gallon.	£ 8,000	£ 16,000	30th June, 1913.
Refined paraffin wax ...	2s. 6d. per cwt.	2,000	4,000	

* The product of shale, having a flashing point of not lower than 73 degrees Fahrenheit, determined by the "Abel Pensky" test apparatus in manner prescribed.

During the year ended 30th June, 1913, the Commonwealth Oil Corporation, at Hartley Vale, New South Wales, received bounty to the amount of £804 on kerosene, and £882 on refined paraffin wax, while the British Australian Oil Company received £1988 on kerosene, and £86 on paraffin wax.

§ 13. Other Non-Metallic Minerals.

1. **Alunite.**—Probably the most remarkable deposit of alunite in the world occurs at Bullahdelah, in the county of Gloucester, New South Wales, a large proportion of a low bluff ridge in the district being composed of this mineral. The deposits are worked by quarrying, and up to the end of 1912, 39,035 tons had been exported, valued at £119,543, the exports for the year 1912 being 3425 tons, valued at £13,700.

Deposits of a high-class alunite are reported to have been discovered near Sunbury, in Victoria.

In South Australia an extensive deposit of the mineral was located in 1913 at Carrickalinga Head, on the coast north of Normanville, and within a short distance of Adelaide. It is stated that the specimens so far analysed have proved richer in valuable constituents than any similar find yet recorded.

2. **Asbestos.**—This substance has been found in various parts of Australia, but up to the present has not been produced in any considerable quantity. In New South Wales the deposits at Jones' Creek, in the Gundagai division, were opened up during the year 1909 and a trial parcel of 15 tons shipped to Germany. There was, however, no record of production in 1912. In Western Australia what may prove to be a valuable deposit of the fibrous chrysotile variety has been located at Tambourah, on the West Pilbara gold-field, and in 1909 £154 worth of this mineral was raised. In 1899 Tasmania raised 200 tons, valued at £363, but there has been no production during the last ten years.

Deposits of asbestos of the mountain leather and mountain cork varieties have been discovered at Oodlawirra, while deposits of a good blue variety have been discovered near Hawker, and about 23 miles from Eudunda, in South Australia.

3. **Barytes.**—In New South Wales during 1912 about 102 tons of barytes, valued at £254, were obtained at Bethungra, in the Cootamundra division, and 292 tons, valued at £498, were raised at Lue in the Mudgee division. About 300 tons of inferior quality stone was produced from a mine at Cobargo.

4. **Clays and Pigments.**—Valuable deposits of clays and pigments of various sorts are found throughout the Commonwealth. There is a considerable local production of earthenware, bricks, and tiles, but the finer clays have not as yet been extensively used. The production of kaolin in 1912 amounted to 394 tons, valued at £185, raised in the Parkes, Murrumburrah, and Goulburn divisions. Fireclay to the amount of 14,152 tons, valued at £1528, was raised in the Wollongong division. Deposits of steatite near Wallendbeen were worked during 1912, the quantity disposed of during the year amounting to 168 tons. In Victoria 288 tons of kaolin, valued at £342, were raised during 1912, of which 238 tons were raised at Egerton, and the balance at Pyalong. In Queensland 6336 tons of fireclay, valued at £2535, were mined during the year 1912, in the Mount Morgan district. On Kangaroo Island, South Australia, where, it is stated, the first pottery mill in the Commonwealth was erected, there are vast deposits of felspar, china, stone, silica, and firebrick clay. There are also very extensive deposits of fireclay near Ardrossan on the Yorke Peninsula. Porcelain and other clays of good quality have been found in the Kingston district in Tasmania. A small parcel of kaolin from the Zeehan district yielded about 50 per cent. after treatment, but it is stated that the product could not be profitably exported to Europe. Deposits of ochre have been opened up at Dubbo, Wellington, and Marulan, in New South Wales, and ochres and pigments of excellent quality have been produced therefrom. Extensive deposits of iron oxide, giving a return of 80 per cent. ochre, have been discovered near Oodlawirra in South Australia.

5. **Coorongite.**—This peculiar indiarubber-like material was first noted many years ago near Salt Creek and in the vicinity of Coorong Inlet, in South Australia. It was thought that the substance owed its origin to subterranean oil-bearing strata, but so far the search for petroleum has not been attended with success.

6. **Fuller's Earth.**—Small quantities of this material were produced in 1912, from leases near Narrabri, in New South Wales, the total sold amounting to 50 tons, valued at £287.

7. **Graphite.**—Graphite is found in New South Wales near Undercliff Station, in the county of Buller, but the deposit is not sufficiently pure to prove remunerative. A small quantity of ore was forwarded in 1911 to England from a site on the Bookookoorara in the Wilson's Downfall division. In Victoria the mineral occurs in Ordovician slates in several of the goldfields, but is not worked. In Queensland graphite was raised some years ago by the Graphite Plumbago Company at Mt. Bopple, near Netherby, on the Maryborough-Gympie line. In Western Australia deposits occur near Bunbury.

8. **Gypsum.**—This mineral is found at various places in the Commonwealth. It occurs in two forms, large crystals, and a floury earth consisting of minute crystals and known as "copi." Both forms are exceedingly pure. It is largely used as a natural manure and to some extent in the manufacture of Portland cement. Gypsum, or hydrous sulphate of lime, when burnt forms plaster of Paris, but in spite of the abundant supply of suitable material it has not yet been used for this purpose. In Victoria during 1912 there was a production of 2078 tons, valued at £3359, of which 1240 tons were obtained at Boort, 813 tons at Lake Boga, and 25 tons at Reedy Lake.

9. **Tripolite, or Diatomaceous Earth.**—Although tripolite has been found at Barraba, Cooma, Wyrallah, and in the Warrumbungle Mountains in New South Wales, the deposits have not yet been worked commercially on any considerable scale. From the deposits at Bunyan, in the Cooma division, 31 tons of diatomaceous earth, valued at £132, were produced in 1912. In Victoria there is a remarkably pure deposit at Lillicur, near Talbot, while beds of the mineral are also met with at other places in the Loddon valley, near Ballarat, at various places close to Melbourne, at Craigieburn, Lancefield, Portland, Swan Hill, Bacchus Marsh, etc. From the deposit at Talbot, 850 tons, valued at £3400, were obtained in 1912. A fairly extensive deposit of tripolite exists in Queensland, between Nerang and Beaudesert, but the various outcrops have as yet been only partially examined.

10. **Salt.**—Salt is obtained from salt lakes in the Western and North-western Districts of Victoria, and from salterns in the neighbourhood of Geelong. Large quantities are also obtained from the shallow salt lakes of South Australia, chiefly on Yorke Peninsula. Lake Hart, about sixty square miles in area, situated about 120 miles N.W. from Port Augusta, contains immense supplies of salt of good quality, which at present, however, owing to distance from market, possess no economic value. The salt is simply scraped from the beds of the lakes in summer time and carted to the refinery. It is stated that care must be taken not to leave too thin a crust of salt over the underlying mud, as the resultant "crop" after the winter rains will in that case be smaller than usual. A bore recently put down near Kingscote, on Kangaroo Island, revealed brine which can be profitably used by evaporation. In Western Australia supplies are obtained from dried-up shallow lakes and consumed locally or exported. The chief centres of production were formerly Rottnest Island, near Fremantle, and Middle Island, near Esperance, but the greater part of that now produced is obtained at Port Gregory.

11. **Natural Manures.**—Gypsum has already been referred to. (See 8 *ante*.) South Australia possesses deposits of rock phosphate near Port Clinton and Ardrossan on Yorke Peninsula, at Belvedere near Kapunda, and at Koorunga, and also at many other places which have only been prospected to a small extent. Although it can hardly be considered a mineral product, mention may be made here of the large accumulations of guano on the Aboihos Islands, off the coast of Western Australia, in the neighbourhood of Geraldton. The deposits vary in thickness from four to twenty-seven inches. During the years 1876-80 over 36,000 tons were raised; no figures are available shewing the production of recent years.

§ 14. Gems and Gemstones.

1. **Diamonds.**—Diamonds were first noted in New South Wales by E. J. Hargraves in 1851, and in October of the same year by Geological Surveyor Stutchbury. The Cudgong field was discovered in 1867, and shortly afterwards the Bingara diamondiferous deposits were located. Stones of small size are also found at Cope's Creek and other places in the Inverell district. The largest diamond won in New South Wales was reported to have been obtained in 1905 at Mt. Werong, near Oberon, and weighed 28½ carats. It is difficult to secure accurate returns in connection with the production of precious stones, but the yield of diamonds in 1912 was estimated at 2240 carats, valued at £2001, while the total production to the end of 1912 is given as 178,971 carats, valued at £120,408. The yield in 1912 was contributed by miners working in the vicinity of Copeton, in the Tingha division. Small quantities of diamonds are found in Victoria in the gravels of streams running through granite country in the Beechworth district; at Kongbool in the Western District; and near Benalla. The stones are generally small,

and the production up to date has been trifling. In 1912, eleven small diamonds, valued at £20, were picked out of the sluice boxes of the Great Southern alluvial mine at Rutherglen. A few small diamonds have been found in the Pilbara district in Western Australia. In South Australia diamonds have been found on the Echunga goldfield, the most notable gem being Glover's diamond, which was sold for £70.

2. Sapphires.—These gems were discovered in New South Wales in 1851, near Burrandong. They have also been found in small quantities near Inverell, and at a few other localities in the State. There is no record of production. Specimens of sapphire have been found in Victoria, but the stones of commercial size are generally of little value owing to flaws.

In Queensland sapphires are found in the gravel of creek beds, between Withersfield and Anakie on the Rockhampton-Winton railway line. The gems show excellent fire and lustre, but the colour is darker blue than the Oriental sapphire. Hyacinths are occasionally found in association with the gems. The production of sapphires in Queensland in 1912 was valued at £40,016, and up to the end of 1912 the total was £226,202. The production in 1912 included industrial corundum to the value of £7644. Sapphires are plentifully found in the tin drifts of the Ringarooma and Portland districts in Tasmania, but the stones are, as a rule, small and not worth saving.

3. Precious Opal.—This stone was first discovered in New South Wales at Rocky Creek on the Abercrombie River, in the year 1877, and later a most important discovery was made at White Cliffs in the Wilcannia district, which, until recently, contributed the bulk of the production. In 1912, however, out of a total production valued at £35,008, the yield from the Lightning Ridge field near Walgett, amounted to £26,180, while the output from the White Cliffs field was returned at £8828. Some very fine stones are at times obtained, one weighing 5 ozs. and valued at £300, being recovered in 1911. Occasionally, black opals of very fine quality are found, one specimen from the Wallangulla field, weighing $6\frac{1}{2}$ carats, being sold in 1910 for £102. The total value of opal won in New South Wales since the year 1890 is estimated at £1,330,000.

Small quantities of precious opal are also found in the Beechworth district in Victoria.

In Queensland, the first recorded discovery of the gem dates from about 1875. The opaliferous district stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1912 was estimated at £3000, and up to the end of that year at £172,195. These figures are, however, merely approximations, as large quantities of opal are disposed of privately to buyers on the fields, no record of which is obtained. At present, the industry is not in a very satisfactory position, as the shallower grounds of the older centres have been worked out, and there appears to be little disposition to explore the deeper grounds.

4. Other Gems.—Emeralds were found in New South Wales in the year 1890, near the township of Emmaville, the largest specimen found in the district weighing twenty-three carats in the rough. Altogether 2225 carats were sent to London during that year, some of the gems bringing £4 a carat, but the production has since dwindled. The mine at the Glen in the Emmaville division was reopened and worked for a short period during 1908, when about 1000 carats of emeralds, valued at about £1650, were obtained. The largest stone in the rough weighed 60 carats. Amongst other gems found in New South Wales at various times may be mentioned *turquoises*, discovered in 1894, near Bodalla; *topazes*, fine specimens of which have been obtained in the New England district, and *zircon*s and *garnets*. Zircons of small size are plentifully found in the vicinity of Table Cape in Tasmania. Topazes are common in the tin drifts of Tasmania, and some fine specimens have been found. Turquoises are also found in thin veins in Victoria. In Gascoigne's mine, situated near the King River, in the parish of Edi, samples of the gem have been found equal in colour to the best Persian stone, and a considerable quantity

of turquoises from this mine has been sold in England and Germany. Fine *agates* are found in many places in Victoria, but have not been made use of to any extent. Garnets are found in Western Australia, and beautiful specimens of *crocidolite* have been obtained at Yarra Creek in the Murchison district. *Rubies* have been found at various places in New South Wales and Queensland. *Tourmaline* has been found on Kangaroo Island, in South Australia, and *beryls* near Williamstown, Victoria. Very large but impure beryl crystals have been found at Ben Lomond in Tasmania. Some fine samples of *chiastolite* or luck stone have been found at Mt. Howden, near Bimbourie, in South Australia.

(C.) GENERAL.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. **Total Employment in Mining.**—The number of persons engaged in the mining industry in each State and in the Commonwealth is an index of the significance of the mineral wealth. During the year 1912 the number so employed was as follows:—

NUMBER OF PERSONS ENGAGED IN MINING, 1912.

State.	Number of Persons Engaged in Mining for						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal and Shale.	Other.	
New South Wales ...	3,898	9,062	2,384	2,646	18,051	1,817	37,858
Victoria	11,856	...	6	57	1,486	163	13,568
Queensland	3,981	208	3,457	2,153	2,019	920	12,738
South Australia ...	920	30	4,500	...	...	1,050	6,500
Western Australia ...	13,700	60	223	409	542	27	14,961
Tasmania	485	1,377	1,681	1,762	155	106	5,566
Northern Territory ...	263	18	52	287	...	32	652
Commonwealth ...	35,103	10,755	12,303	7,314	22,253	4,115	91,843

The following table shews the number of persons engaged in mining in the Commonwealth during each of the years 1891, 1901, and 1912, together with the proportion of the total population so engaged:—

PROPORTION OF PERSONS ENGAGED IN MINING, 1891, 1901, and 1912.

State.	1891.		1901.		1912.	
	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.	Miners Employed.	No. per 100,000 of Popu- lation.
New South Wales ...	30,604	2,700	36,615	2,685	37,858	2,180
Victoria	24,649	2,151	28,670	2,381	13,568	1,000
Queensland	11,627	2,934	13,352	2,664	12,738	2,017
South Australia ...	2,683	834	7,007	1,931	6,500	1,541
Western Australia ...	1,269	2,496	20,895	11,087	14,961	4,963
Tasmania	3,988	2,695	6,923	4,017	5,566	2,888
Northern Territory ...	...	...	...	...	652	...
Commonwealth ...	74,820	2,341	113,462	2,992	91,843	1,977

2. **Wages Paid in Mining.**—Particulars regarding wages paid in the mining industry, which in preceding issues of the Year Book were given in this section, have now been transferred to the section dealing with Labour and Industrial Statistics.

3. **Accidents in Mining, 1912.**—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1912:—

NUMBERS KILLED AND INJURED IN MINING ACCIDENTS, 1912.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. T.	Cwlth.
KILLED.								
Coal and shale	30	2	...	...	...	...	...	32
Copper ...	5	...	12	1	1	48	...	67
Gold...	8	16	8	...	34	2	...	68
Silver, lead and zinc	17	...	1	...	...	1	...	19
Tin ...	1	...	1	...	...	2	...	4
Other minerals	...	...	4	...	...	...	...	4
Total ...	61	18	26	1	35	53	...	194

INJURED.

Coal and shale	81	19	45	...	58	2	...	205
Copper ...	6	...	112	2	...	15	...	135
Gold...	3	75	80	...	432	8	...	598
Silver, lead and zinc	22	...	2	...	1	12	...	37
Tin ...	1	...	1	...	...	16	...	18
Other minerals	...	1	3	...	...	...	...	4
Total ...	113	95	243	2	491	53	...	997

§ 16. State Aid to Mining.

1. **Introduction.**—The terms and conditions under which State aid is granted in mining are alluded to at some length in previous issues (see Year Books IV. and V.), but owing to considerations of space they have been omitted from this issue.

2. **New South Wales.**—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1912 the total sum expended in this manner amounted to £433,359, of which £12,091 was advanced in 1912. During the year the Government subsidy to the Miners' Accident Relief Fund amounted to £14,091.

3. **Victoria.**—Under the Mining Development and Surplus Revenue Acts the sum of £414,529 was expended from revenue, and £166,939 was provided out of votes during the period 1897 to 1912 as follows:—

	£
Advances to mining companies	153,818
Advances to prospectors	65,139
Boring for gold and coal	188,840
Construction of roads and tracks	61,636
Erection of testing plants, batteries, etc.	62,958
Miscellaneous, cyanide patents, Schools of Mines, etc.	49,082
Total	581,468

The expenditure in 1912 was £26,684, of which £3466 was advanced to companies; £3976 was loaned to miners; £166 was spent on constructing roads, etc.; £16,477 on boring for gold, and £2599 on testing plants and miscellaneous. The Government batteries number 25, and of these 15 are managed by local trusts without expense to the Department so far as cost of working is concerned. The repayment of loans by companies amounts to £20,837, by miners £2305, and for cost of boring £6752. The State's contribution to the Coal Miners' Accident Relief Fund amounted in 1912 to £736.

4. **Queensland.**—State assistance to the mining industry in 1912 amounted to £16,622, of which £8778 consisted of loans in aid of deep sinking; £1037 grants in aid of prospecting; £4270 in aid of roads and bridges to gold and mineral fields; £537 advance under Mining Machinery Advances Act 1906; and £2000 grant in aid of coal prospecting at Mount Mulligan.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1912 the total amount of subsidy paid was £57,118, of which £7170 has been recovered, leaving a debit of £49,948. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Four Government batteries are in operation in this State.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1912 in accordance with the subjoined statement.

Advances in aid of mining work and equipment of mines with machinery, £3773; advances in aid of erection and equipment of crushing plants, including subsidies on stone crushed for the public, £3710; advances in aid of boring, £2103; providing means of transport, £253. In addition, amounts totalling in all £34,016 were expended from the Mining Development vote on various matters such as water supply, roads, cartage, and subsidies for development below the 100 feet level in small mines. The sum of £3710 shewn above includes an amount of £999 paid to owners of plants crushing for the public at fixed rates. All water supply works on the goldfields are now carried out by the Water Supply Department.

In 1912 there were thirty-five State batteries in operation. The amount expended on the erection of State batteries up to the end of 1912 was £91,981 from revenue, and £217,859 from loan, giving a total of £309,840. During the year receipts amounted to £40,857, and working expenditure to £49,805.

The total value of gold and tin recovered to the end of 1912 at the State plants was £3,956,337, resulting from the treatment of 900,416 tons of gold ore and 56,884 tons of tin ore.

7. Tasmania.—In Tasmania provision is made for State aid to mining under the Deep-Sinking Encouragement Acts of 1899, 1900, and 1901. Under these Acts sums of £5000, £2000, and £1000 respectively were provided for assisting persons and companies to sink shafts or to drive tunnels below a specified depth, the amount advanced in any particular case varying according to the amount expended by the borrower. The total amount advanced to October, 1909, was £6861, granted to five companies in sums ranging from £682 to £1452, leaving an unexpended balance of £1139. None of the companies to whom the advances were made has been successful, and consequently none of the sums advanced, which were to be repaid out of profits, has been refunded. A sum of £1000 was placed on the estimates for 1911-12 for the purpose of assisting prospectors, the money to be expended on the £ for £ principle, and of this £730 was expended. A further sum of £1000 was provided for the year ended 30th June, 1913, and of this the amount expended to the 30th December, 1912, was £332.

8. Northern Territory.—Prior to 1912, prospectors were helped by grants of rations and some monetary assistance, but it was found that these privileges were occasionally abused, and steps have now been taken to ensure the bonafides of all seeking aid. Provision is also made for generous grants to discoverers of metalliferous ores.

SECTION XIII.

MANUFACTURING INDUSTRIES.

§ 1. General.

1. **Industrial Progress.**—The statistics of manufactures in the Commonwealth shew that many industries have now been permanently established on a secure basis, and also indicate a consistent progress both in regard to the extension of existing industries and the establishment of new ones. As will be seen in the following pages of this section, this progress has been particularly in evidence since the abolition of inter-colonial tariffs, which took place upon the creation of the Commonwealth of Australia in 1901.

(i.) *The Gold Discoveries, 1851.* Prior to the gold discoveries (1851) there was little development in the manufacturing industries of Australia. Reference to that period will be found in previous issues of the Year Book (see No. 6, page 524).

(ii.) *Later Progress.* Soon after the discovery of gold, the construction of the first railways (1854) and the re-establishment of regular steamship communication with Europe (1856) helped to encourage the nascent industrial activity. The Colonies of New South Wales and Victoria, which had recently (1855) received the benefits of responsible government, soon turned their attention to the settlement of an agricultural population on the land. The Acts which were passed had a beneficial effect on the working classes, giving them opportunities for employment not previously open to them, and fostering the manufacturing industries by increasing the measure of primary production. During the following years the various manufacturing industries prospered. The statistics of the States are not sufficiently complete or uniform to enable a statement of the progress of these industries to be given. The following table, however, shewing, so far as returns are available, the number of factories and the number of employees in each State at decennial periods since 1861, will serve to indicate generally the progress which has been made:—

NUMBER OF FACTORIES AND EMPLOYEES IN EACH STATE, 1861 to 1912.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
NUMBER OF FACTORIES.							
1861	601	531	...	...	...	...	...
1871	1,813	1,740	...	...	...	...	...
1881	2,961	2,488	571†	829†	...	...	...
1891	3,056	3,141	1,328†	996†	175	...	...
1901	3,367	3,249	2,110†	1,335†	662	420*	11,149†
1911	5,089	5,126	1,657	1,314	710	609	14,455
1912	5,162	5,263	1,790	1,341	711	611	14,878
NUMBER OF EMPLOYEES.							
1861	...	4,395	...	...	...	...	...
1871	13,583	19,569	...	5,629†	...	...	...
1881	31,191	43,209	...	10,995†	...	...	...
1891	50,879	53,525	...	14,099†	...	...	...
1901	66,135	66,529	26,172†	19,283†	12,198	7,466*	197,783†
1911	108,624	111,948	37,156	27,885	15,799	10,298	311,710
1912	115,561	116,108	40,948	28,500	16,382	9,957	327,456

* For 1902. † Not on same basis as other States. ‡ Not on same basis for some of States as in 1911.
NOTE.—In this and all subsequent tables, except where specially mentioned, "Number of Employees" includes working proprietors.

Since the inauguration of the Commonwealth, the throwing open of the whole of the Australian markets to the industrial products of each State has facilitated the internal distribution of the products of Australian industry.

2. Defects in Industrial Statistics.—A complete statistical account of the growth of the manufacturing industries in Australia unfortunately cannot be given for any lengthy period, owing to the fact that the necessary statistics have not been collected in past years by the several States upon a definite and identical basis. Even in respect of either the definition of a "factory" or (so far as they might be included in related returns) the statistics of persons employed therein, there was formerly no common agreement. The relatively minor place that manufacturing industry held in relation to the total activity of Australia was, perhaps, responsible for the fact that the necessity for uniform method was not earlier recognised.

In 1896 it was agreed, as between Victoria and New South Wales, to adopt a common definition of the term "factory," viz., "any factory, workshop, or mill where four or more persons are employed or power is used." This agreement was adopted for the States generally at the Conference of State Statisticians in 1902, when it was decided, however, that the term "factory" should include also "all establishments, whether making for the trade, wholesale or retail, or for export." It was further agreed that industries should be arranged, as far as possible, under a uniform classification. As a result of the conference of 1902 a higher degree of uniformity in the collection and presentation of industrial statistics was attained in the several States, so that returns upon which anything like a proper comparative study of the development and progress of various manufacturing industries in the Commonwealth may be based, date back only as far as the year 1903, when the resolutions of the conference first came to be put into force. All the States did not, however, fall completely into line, and, as may be seen in the succeeding parts of this section, the comparisons afforded by the returns for the years 1903 to 1906 inclusive, are in some cases subject to various limitations. At the Conference of Statisticians held in Melbourne in 1906 special consideration was given to the methods to be adopted for the collection of statistical information regarding primary and secondary production and industry. A definite classification of industries was adopted, and a set of forms for the collection and compilation of industrial statistics on a definite and uniform basis in each State was agreed upon. The States have not, even yet, fallen entirely into line in collecting and classifying the returns. The particulars for the past four years are, however, in more complete co-ordination than formerly, and it is now possible to give particulars for the several States in greater detail and on a more uniform basis throughout.

3. Classification of Manufacturing Industries.—Under the classification adopted at the Conference of Statisticians held in 1906, factories were placed under nineteen different categories, according to the nature of the industry carried on therein; many of the categories were also subdivided. Where two or more industries are carried on by one proprietor in one building, each industry is, when possible, treated as a separate establishment. The statement given below shows the classification which has been adopted; it must be understood, however, that this classification does not pretend to be exhaustive, but merely serves as a guide for the collection and presentation of statistics in the several States on a definite and uniform basis:—

CLASSIFICATION OF MANUFACTURING INDUSTRIES.

CLASS I.—TREATING RAW MATERIALS, ETC. Boiling-down, Tallow Refining, etc. Tanneries Woolscouring & Fellmongering Chaff-cutting, etc. CLASS II.—OILS AND FAT, ETC. Oil and Grease Soap and Candles CLASS III.—STONE, CLAY, GLASS, ETC. Bricks and Tiles Glass (including Bottles) Glass (Ornamental) Lime, Plaster, Cement and Asphalt Marble, Slate, etc. Modelling, etc. Pottery and Earthenware CLASS IV.—WORKING IN WOOD. Boxes and Cases Cooperage Joinery Saw Mills Wood-turning, etc. CLASS V.—METAL WORKS, MACHINERY, ETC. Agricultural Implements Brass and Copper Cutlery Engineering Galvanised Iron-working Ironworks and Foundries Lead Mills Railway Carriages Railway and Tramway Workshops Smelting Stoves and Ovens Tinsmithing Wireworking Other Metal Works CLASS VI.—FOOD AND DRINK, ETC. Bacon Curing Butter Factories Butterine and Margarine Cheese Factories Condensed Milk Meat and Fish Preserving Biscuits Confectionery	Corn-flour, Oatmeal, etc. Flour Mills Jam and Fruit Canning Pickles, Sauces, and Vinegar Sugar Mills Sugar Refining Aerated Waters, Cordials, etc. Breweries Condiments, Coffee, Spices, etc. Distilleries Ice and Refrigerating Malting Tobacco, Cigars, etc. CLASS VII.—CLOTHING AND TEXTILE FABRICS. Woolen and Tweed Mills Boots and Shoes Slop Clothing Clothing (Tailoring) Dressmaking and Millinery—Makers' material Customers' material Dyeworks and Cleaning Furriers Hats and Caps Waterproof and Oilskin Shirts, Ties, and Scarfs Rope and Cordage Tents and Tarpaulins CLASS VIII.—BOOKS, PAPER, PRINTING, ETC. Electrotyping & Stereotyping Paper-making, Paper Boxes, Bags, etc. Photo-engraving Printing and Binding CLASS IX.—MUSICAL INSTRUMENTS, ETC. Musical Instruments and Sewing Machines CLASS X.—ARMS & EXPLOSIVES Arms Explosives CLASS XI.—VEHICLES, SADDLERY, HARNESS, ETC. Coach and Wagon Building Cycles Perambulators Saddlery, Harness, etc. Spokes, etc.	CLASS XII.—SHIP AND BOAT BUILDING AND REPAIRING. Docks and Slips Sailmaking Ship and Boat Building and Repairing CLASS XIII.—FURNITURE, BEDDING, ETC. Bedding, Flock, & Upholstery Billiard Tables Furniture and Cabinet Making Picture Frames Window Blinds CLASS XIV.—DRUGS AND CHEMICALS, ETC. Chemicals, Drugs, and Medicines Fertilisers Paints, Varnishes, and By-products CLASS XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS. Surgical, Optical, and other Scientific Instruments CLASS XVI.—TIMEPIECES, JEWELLERY, & PLATED WARE. Electro-plating Manufacturing Jewellery, etc. CLASS XVII.—HEAT, LIGHT, AND POWER. Coke Works Electric Apparatus Electric Light and Power Gas Works and Kerosene Lamps and Fittings, etc. Hydraulic Power CLASS XVIII.—LEATHERWARE (N.E.I.) Leather Belting, Fancy Leather, Portmanteaux & Bags CLASS XIX.—MINOR WARES. Basket and Wickerware, Matting, etc. Brooms and Brushware Rubber Goods Toys Umbrellas Other Industries
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§ 2. Number of Manufactories.

1. **General.**—In stating the number of factories in the States of the Commonwealth it is to be remembered that in the collection of statistics, for years prior to 1907, the same basis has not been adopted in each State. In Queensland, for example, prior to 1906, the statistics included all establishments where two or more hands were employed, except Government railway workshops, which were not included till 1907. The difference in other respects is not material.

In the following table, shewing the total number of manufactories in the Commonwealth during the years 1903 and 1908 to 1912, it should be noted that not only are the results affected by differences of classification prior to 1907, but also that the number of

factories from year to year does not unequivocally indicate a change in the position of the industry, since amalgamations may account for part of the reduction of the numbers. (See § 3, 5.)

MANUFACTORIES OF THE COMMONWEALTH, 1903, and 1908 to 1912.

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
1903 ...	3,476	4,151	2,001*	906*†	586	431	11,551
1908 ...	4,453	4,608	1,371	1,237	627	557	12,853
1909 ...	4,581	4,755	1,420	1,265	632	576	13,229
1910 ...	4,821	4,873	1,563	1,278	680	635	13,850
1911 ...	5,039	5,126	1,657	1,314	710	609	14,455
1912 ...	5,162	5,263	1,790	1,341	711	611	14,878

* Not on same basis as other States. † 1904 results, those for 1903 not available.

(i.) *Classification of Factories in Commonwealth, 1908 to 1912.* The following table shews the total number of factories in the Commonwealth at the end of each year from 1908 to 1912, classified on the basis indicated in § 1, 3 hereof:—

CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH, 1908 to 1912.

Class of Industry.	1908.	1909.	1910.	1911.	1912.
	No.	No.	No.	No.	No.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	812	855	855	857	871
II. Treating oils and fats, animal, vegetable, etc. ...	97	94	100	105	102
III. Processes in stone, clay, glass, etc. ...	627	645	703	719	709
IV. Working in wood ...	1,322	1,411	1,474	1,625	1,752
V. Metal works, machinery, etc. ...	1,548	1,588	1,620	1,697	1,779
VI. Connected with food and drink, etc. ...	2,253	2,258	2,286	2,310	2,331
VII. Clothing and textile fabrics, etc. ...	2,681	2,774	2,982	3,093	3,115
VIII. Books, paper, printing and engraving ...	993	1,011	1,062	1,144	1,158
IX. Musical instruments, etc. ...	17	18	20	19	21
X. Arms and explosives ...	8	9	13	14	16
XI. Vehicles and fittings, saddlery and harness, etc. ...	1,105	1,117	1,195	1,208	1,249
XII. Ship and boat building and repairing ...	76	84	85	87	97
XIII. Furniture, bedding, and upholstery ...	483	512	560	613	670
XIV. Drugs, chemicals, and by-products ...	153	164	176	189	202
XV. Surgical and other scientific instruments ...	28	30	35	41	44
XVI. Jewellery, timepieces, and platedware ...	153	150	155	169	177
XVII. Heat, light, and power ...	307	314	326	351	372
XVIII. Leatherware, n.e.i. ...	54	55	60	62	66
XIX. Minor wares, n.e.i. ...	136	140	143	152	147
Total ...	12,853	13,229	13,850	14,455	14,878

For the purpose of the returns in the above table the definition of a factory adopted at the Conference of Statisticians in 1902 (see § 1, 2 hereof) is used, viz., "Any factory, workshop or mill where four or more persons are employed or power is used." The total increase in the number of factories according to this table from 1908 to 1912 was 2025, or an average of 506 a year. The state of the manufacturing industries throughout Australia cannot, however, be gauged from a mere enumeration of the number of factories. Some of the factories concerned were practically in their infancy, employing but few hands, while others were developed on a large scale. Also, as pointed out previously, amalgamations may in some instances account for a reduction in the numbers.

(ii.) *Classification of Factories in each State, 1912.* The following table shews the number of factories in each State of the Commonwealth at the end of the year 1912, classified according to the nature of the industry. (See classification given in § 1, 3 hereof):—

CLASSIFICATION OF FACTORIES IN EACH STATE, 1912.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	Cwlth.
	No.	No.	No.	No.	No.	No.	No.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	287	335	50	129	31	39	871
II. Treating oils and fats, animal, vegetable, etc. ...	45	24	15	11	4	3	102
III. Processes in stone, clay, glass, etc.	297	222	38	90	42	20	709
IV. Working in wood ...	689	413	329	98	72	151	1,752
V. Metal works, machinery, etc.	536	714	231	179	72	47	1,779
VI. Connected with food and drink, etc.	765	652	414	251	138	111	2,331
VII. Clothing and textile fabrics, etc.	997	1,398	256	230	138	96	3,115
VIII. Books, paper, printing & engraving	426	427	147	74	59	25	1,158
IX. Musical instruments, etc.	14	5	...	2	...	...	21
X. Arms and explosives	6	9	...	1	...	...	16
XI. Vehicles and fittings, saddlery and harness, etc.	393	434	158	151	57	56	1,249
XII. Ship and boat building & repairing	47	13	13	11	5	8	97
XIII. Furniture, bedding, and upholstery	220	255	81	55	34	25	670
XIV. Drugs, chemicals, and by-products	87	88	3	12	11	1	202
XV. Surgical and other scientific instruments	13	18	6	2	5	...	44
XVI. Jewellery, timepieces, & platedware	53	85	11	15	5	8	177
XVII. Heat, light, and power	203	90	24	14	26	15	372
XVIII. Leatherware, n.e.l.	24	32	4	3	3	...	66
XIX. Minor wares, n.e.l.	60	49	10	13	9	6	147
Total ...	5,162	5,263	1,790	1,341	711	611	14,878

2. Use of Mechanical Power.—The principal motive power is steam, but the chief towns possess electric power stations owned either by the Government, or by public bodies or private companies. From these many factories find it convenient to derive their motive power.

The following table shews the number of factories in which machinery was worked by steam, gas, oil, or electricity, and the horse-power of engines or motors used, in each State and in the Commonwealth, during the year 1912:—

UTILISATION OF MECHANICAL POWER IN FACTORIES IN EACH STATE, 1912.

State.	Number of Establishments.			Actual Horse-power of Engines Used.				
	Using Machinery worked by Steam, Gas, Oil, or Electricity	Others.	Total.	Steam.	Gas.	Oil.	Elec- tricity.	Total.
	No.	No.	No.	H.P.	H.P.	H.P.	H.P.	H.P.
New South Wales	3,775	1,387	5,162	130,479	16,028	1,181	26,652	174,340
Victoria ...	3,551	1,712	5,263	59,262	13,745	1,778	14,505	89,290
Queensland	1,301	489	1,790	36,706	5,733	1,079	4,396	47,914
South Australia ...	953	388	1,341	21,119	5,217	1,885	4,624	32,845
Western Australia	533	178	711	24,594	2,886	668	1,131	32,232
Tasmania	445	166	611	12,068	296	238	2,486	15,088
Commonwealth	10,558	4,320	14,878	284,228	43,905	6,829	56,797	391,759

A comparison of the above table with that immediately preceding will explain the preponderance of horse-power employed in the New South Wales factories, this State possessing by far the largest number of industries demanding a considerable amount of power; Victoria, on the other hand, has the largest number of establishments, such as those connected with clothing and textile fabrics, wherein much less mechanical power is utilised.

The number of establishments in the Commonwealth using machinery worked by steam, gas, oil, or electricity was 10,558, being 70.96 per cent.; 4320 establishments, representing 29.04 per cent., used no mechanical power. The total average horse-power in use was 391,759, of which engines in which the motive power was steam formed 72.55 per cent.; gas, 11.21 per cent.; oil, 1.74 per cent.; and electricity, 14.50 per cent. During 1912 there were 586 more establishments using power than in 1911, the increase in horse-power employed being 48,209, or over fourteen per cent.

§ 3. Numbers Employed in Australian Factories.

1. Total Number Employed.—Each person employed in and about a factory, in whatever capacity, is now included as a factory employee, consequently every proprietor who works in his business is counted as an employee, and all "outworkers" (see paragraph 6 hereinafter) are also included. The individuals embraced may be classed under the following heads, viz.:—(i.) Working proprietors; (ii.) managers and overseers; (iii.) accountants and clerks; (iv.) enginedrivers and firemen; (v.) skilled and unskilled workers in the factories, mills, or workshops; (vi.) carters and messengers; and (vii.) others.

(i.) *Average Numbers Employed, 1908 to 1912.* The following table shews, for each year from 1908 to 1912 inclusive, (a) the average numbers of persons (including both sexes and all ages) employed in manufacturing industries in each State; (b) the percentage of the numbers employed in each State on the total numbers employed in the Commonwealth; and (c) the numbers employed per ten thousand of the mean population in each State and the Commonwealth:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN MANUFACTURING INDUSTRIES, 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
AVERAGE NUMBER.							
1908 ...	89,098	93,803	29,200	24,236	12,425	8,727	257,494
1909 ...	91,702	97,355	29,504	25,709	12,826	9,565	266,661
1910 ...	99,711	102,176	33,944*	27,010	14,107	9,980	286,928
1911 ...	108,624	111,948	37,156*	27,885	15,799	10,298	311,710
1912 ...	115,561	116,108	40,948*	28,500	16,382	9,957	327,456

PERCENTAGE ON COMMONWEALTH TOTAL.

	%	%	%	%	%	%	%
1908 ...	34.60	36.42	11.34	9.42	4.83	3.39	100.00
1909 ...	34.39	36.51	11.06	9.64	4.81	3.59	100.00
1910 ...	34.76	35.61	11.83*	9.41	4.91	3.48	100.00
1911 ..	34.85	35.91	11.92*	8.95	5.07	3.30	100.00
1912 ...	35.29	35.46	12.51*	8.70	5.00	3.04	100.00

PER 10,000 OF MEAN POPULATION.

1908 ...	566	756	527	635	482	465	614
1909 ...	574	772	518	656	487	503	624
1910 ...	611	797	574*	673	521	522	657
1911 ...	654	848	605*	679	551	541	694
1912 ...	665	856	648*	676	543	519	705

* Including a number of drapery and tailoring shops making to order of customer; this class of establishment was omitted in Queensland in years previous to 1910.

(ii.) *Rates of Increase, 1908 to 1912.* From the preceding table it may be seen that there has been a general increase in the average number of persons employed in manufacturing industries during the period referred to. The following table shews the percentage of increase during each year on the average number for the preceding year:—

PERCENTAGE OF INCREASE IN AVERAGE NUMBER EMPLOYED, 1908 to 1912.

Years.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
1907-8 ...	3.04	2.75	4.46	6.90	— 1.44	6.31	3.49
1908-9 ...	2.92	3.78	1.04	6.08	3.23	9.60	3.56
1909-10 ...	8.77	4.95	15.05*	5.06	9.99	4.34	7.61
1910-11 ...	8.94	9.56	9.46*	3.32	11.99	3.19	8.65
1911-12 ...	6.35	3.72	10.20	2.12	3.69	— 3.31	5.03

Note. (—) signifies a decrease. * See note (*) to preceding table.

2. Classification of Numbers Employed in Factories in the Commonwealth, 1908 to 1912.—The following table gives a classification of the average numbers of persons employed in factories of different descriptions in the Commonwealth during the years 1908 to 1912 inclusive:—

AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN THE COMMONWEALTH, 1908 to 1912.

Class of Industry.	1908.	1909.	1910.	1911.	1912.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	9,042	9,549	9,655	9,805	9,624
II. Treating oils and fats, animal, vegetable, etc. ...	1,735	1,812	1,872	2,019	2,091
III. Processes in stone, clay, glass, etc. ...	9,420	9,605	10,737	12,093	12,908
IV. Working in wood ...	21,310	22,487	24,530	27,948	30,660
V. Metal works, machinery, etc. ...	48,505	49,753	54,238	60,538	66,472
VI. Connected with food and drink, etc. ...	40,652	41,006	42,921	45,623	46,812
VII. Clothing and textile fabrics, etc. ...	70,075	73,567	78,963	83,845	84,661
VIII. Books, paper, printing and engraving ...	21,448	21,943	23,064	24,292	25,077
IX. Musical instruments, etc. ...	444	433	553	607	628
X. Arms and explosives ...	339	377	431	508	599
XI. Vehicles and fittings, saddlery and harness, etc. ...	10,784	11,368	12,484	13,294	13,400
XII. Ship and boat building and repairing ...	2,278	2,220	2,508	2,920	3,821
XIII. Furniture, bedding and upholstery ...	7,117	7,638	8,434	9,480	10,405
XIV. Drugs, chemicals and by-products ...	3,086	3,391	3,827	4,165	4,381
XV. Surgical and other scientific instruments ...	176	173	190	233	238
XVI. Jewellery, timepieces, and plated ware ...	1,771	1,800	1,896	2,142	2,302
XVII. Heat, light, and power ...	5,754	5,985	6,735	7,651	8,550
XVIII. Leatherware, n.e.i. ...	893	924	1,097	1,226	1,231
XIX. Minor wares, n.e.i. ...	2,665	2,631	2,783	3,321	3,295
Total ...	257,494	266,661	286,928	311,710	327,456

The total increase in the average number of hands employed from 1908 to 1912 was 69,962, or an annual average of 17,490. The increase was general throughout all the various classes of industry. The greatest development took place in Classes V. and VII., the increases being 17,967 and 14,586 respectively.

3. Classification of Numbers Employed in each State, according to Class of Industry, 1912.—The following table shews a similar classification of employees in manufacturing industries in each State for the year 1912:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN VARIOUS FACTORIES IN
EACH STATE, 1912.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aus.	W. Aus.	Tas.	C'with.
I. Treating raw material, product of agricul. and pastoral pursuits, etc.	3,872	3,379	723	1,075	247	328	9,624
II. Treating oils and fats, animal, vegetable, etc.	895	663	166	264	69	34	2,091
III. Processes in stone, clay, glass, etc.	5,932	4,207	619	1,354	574	223	12,909
IV. Working in wood ...	8,973	7,191	5,707	1,858	4,891	2,040	30,660
V. Metal works, machinery, etc.	25,550	20,126	7,399	8,096	3,210	2,091	66,472
VI. Connected with food and drink, etc.	14,249	14,335	11,553	3,564	1,612	1,499	46,812
VII. Clothing and textile fabrics, etc.	27,089	39,770	8,054	5,441	2,623	1,684	84,661
VIII. Books, paper, printing & engraving	9,441	8,901	2,918	1,924	1,174	719	25,077
IX. Musical instruments, etc.	416	189	...	23	...	...	628
X. Arms and explosives	188	707	...	4	...	...	809
XI. Vehicles and fittings, saddlery, and harness, etc.	4,415	4,748	1,458	1,668	622	489	13,400
XII. Ship and boat building & repairing	3,169	240	117	192	26	77	3,821
XIII. Furniture, bedding, and upholstery	3,974	3,263	1,170	1,144	469	385	10,405
XIV. Drugs, chemicals, and by-products	1,547	1,804	65	697	266	2	4,381
XV. Surgical and other scientific instruments	97	90	28	7	16	...	238
XVI. Jewellery, timepieces, & platedware	863	1,037	114	178	70	40	2,302
XVII. Heat, light, and power	3,387	3,052	633	803	371	304	8,550
XVIII. Leatherware, n.e.i.	495	605	76	28	27	...	1,231
XIX. Minor wares, n.e.i....	1,009	1,801	148	180	115	42	3,295
Total	115,561	116,108	40,948	28,500	16,382	9,957	327,456

The largest number employed in any particular class in the Commonwealth was in Class VII., in which there were 84,661 employees, or 25.85 per cent. of the whole number. The class affording employment to the smallest number of hands was Class XV., in which there were 238 hands, or 0.07 per cent. of the total number of employees. Classes VI., VII., and VIII. comprise those industries in which female labour is largely employed. (See § 4, 5 hereof.)

4. Classification of Numbers Employed in each State according to Nature of Employment, 1912.—In the following table the average numbers of persons employed in each State during the year 1912 are classified according to the nature of their employment:—

**AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH STATE, CLASSIFIED
ACCORDING TO NATURE OF EMPLOYMENT, 1912.**

State.	Average Number of Persons Employed.						Total.
	Working Pro-prietors.	Managers and Overseers	Account-ants and Clerks.	Engine-drivers and Firemen.	Workers, Skilled & Unskilled in Factory Mill or Workshop	Carters, Messen-gers and Others.	
New South Wales ...	4,572	3,569	4,284	2,674	97,871	2,591	115,561
Victoria ...	5,325	3,091	3,676	1,712	98,283	4,021	116,108
Queensland ...	1,544	1,310	1,524	1,489	32,753	2,328	40,948
South Australia ...	1,331	843	1,058	550	23,964	754	28,500
Western Australia ...	511	562	626	477	12,583	1,623	16,382
Tasmania ...	496	415	390	442	7,747	467	9,957
Commonwealth ...	13,779	9,790	11,558	7,344	273,201	11,784	327,456

* Including outworkers.

5. Classification of Factories according to Number of Hands Employed, 1912.—

(i.) The number of factories in each State classified according to the number of hands employed, and the total number of hands employed therein, are shewn in the following table:—

**CLASSIFICATION OF FACTORIES IN EACH STATE ACCORDING TO NUMBER
OF HANDS EMPLOYED, 1912.**

No. of Persons Employed in each Factory.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
NUMBER OF FACTORIES.							
Under 4 ...	831	800	197	154	113	108	2,203
4 ...	478	588	166	145	60	65	1,502
5 to 10 ...	1,793	1,844	648	520	246	244	5,295
11 to 20 ...	930	939	341	235	129	86	2,660
21 to 50 ...	681	674	274	186	94	74	1,983
51 to 100 ...	252	223	89	59	46	21	690
Over 100 ...	197	195	75	42	23	13	545
Total ...	5,162	5,263	1,790	1,341	711	611	14,878

AVERAGE NUMBER OF HANDS EMPLOYED.

Under 4 ...	1,943	1,912	473	387	247	242	5,204
4 ...	1,912	2,352	664	580	240	260	6,008
5 to 10 ...	12,468	12,831	4,600	3,610	1,694	1,720	36,923
11 to 20 ...	13,661	13,805	5,043	3,455	1,933	1,199	39,096
21 to 50 ...	21,185	21,298	8,668	6,024	2,990	2,276	62,441
51 to 100 ...	18,008	15,368	6,575	4,211	3,089	1,434	48,685
Over 100 ...	46,384	48,542	14,925	10,233	6,189	2,826	129,099
Total ...	115,561	116,108	40,948	28,500	16,382	9,957	327,456

(ii.) Reference to the following table will shew the tendency of the ratio of the number of hands employed in the larger establishments to still further increase and that of the smaller factories to diminish. In 1908 the ratio of hands in factories employing under 21 hands was 29.72 per cent. of total employees in factories, and in those where over 100 hands were engaged 36.33 per cent., whereas in 1912 the percentages were 26.63 and 39.43 respectively. The number of factories with 20 hands or under in 1908 was 80.46 per cent., this number decreasing to 78.37 in 1912, whereas the larger factories employing over 100 hands shewed an increase from 3.20 to 3.66 per cent. The percentage of hands in factories employing from 21 to 100 hands was virtually the same during each of the two years. The average number employed in all establishments in 1908 was 20.03, and in 1912, 22.01.

**CLASSIFICATION OF FACTORIES IN THE COMMONWEALTH ACCORDING TO
NUMBER OF HANDS EMPLOYED DURING THE YEARS 1908 to 1912.**

Year,	Establishments Employing on the Average—							
	20 hands and under.		21 to 100 hands.		101 hands and upwards.		Total.	
	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.	Es- tablish- ments.	Hands.
1908—								
Number	10,341	76,546	2,101	87,411	411	93,537	12,853	257,494
Average per establishment ...	...	70.40	...	41.60	...	227.58	...	20.03
Percentage to total ...	80.46	29.72	16.34	33.95	3.20	36.33	100.00	100.00
1909—								
Number	10,601	78,288	2,186	89,997	442	98,376	13,229	266,661
Average per establishment ...	...	7.38	...	41.17	...	222.57	...	20.16
Percentage to total ...	80.14	29.36	16.52	33.75	3.34	36.89	100.00	100.00
1910—								
Number	10,985	81,561	2,381	98,243	484	107,124	13,850	286,928
Average per establishment ...	...	7.42	...	41.26	...	221.33	...	20.72
Percentage to total ...	79.31	28.43	17.20	34.24	3.49	37.33	100.00	100.00
1911—								
Number	11,362	85,562	2,567	106,624	526	119,524	14,455	311,710
Average per establishment ...	...	7.53	...	41.54	...	227.23	...	21.56
Percentage to total ...	78.60	27.45	17.76	34.21	3.64	38.34	100.00	100.00
1912—								
Number	11,660	87,231	2,673	111,126	545	122,099	14,878	327,456
Average per establishment ...	...	7.48	...	41.57	...	236.88	...	22.01
Percentage to total ...	78.37	26.63	17.97	33.94	3.66	39.43	100.00	100.00

6. Outworkers.—The term “outworker” or “homeworker” has acquired a special meaning in connection with manufacturing industries, and technically embraces only those to whom work is given out by factory owners to be wrought upon in the employees’ own homes. Individuals working for themselves are not included. The following table gives particulars of the average number of outworkers connected with factories in each State during each year from 1908 to 1912 inclusive :—

NUMBER OF OUTWORKERS* CONNECTED WITH FACTORIES, 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1908 ...	596	1,457	171	74	11	11	2,320
1909 ...	630	1,695	144	65	13	...	2,547
1910 ...	720	1,584	224	68	20	76	2,692
1911 ...	784	1,906	158	88	15	96	3,047
1912 ...	895	1,959	140	71	14	86	3,165

* In all tables relating to number of hands employed in factories outworkers are included.

The Factories Acts in each State contain provisions regulating the employment of outworkers. Generally records of out-work must be kept by factory proprietors, specifying the names and remuneration of workers, and stating the places where the work is done. Further particulars are given in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

§ 4. Sex Distribution in Factories.

1. Employment of Females in Factories.—In all the States the employment of female labour in factories is now regulated by Act of Parliament. In Victoria the first Act dealing with the subject was passed in the year 1873, and provided that no female should be employed for more than eight hours a day without the permission of the Chief Secretary. The number of working hours for women is now limited to forty-eight per week in all the States, overtime being allowed only with the permission of the Departments, and then to a limited extent. The maximum periods of continuous labour, and the intervals of cessation therefrom, are also prescribed by the several Acts. Further reference is made to the restrictions regarding the employment of females in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation.*)

2. Distribution of Employees according to Sex, 1908 to 1912.—In New South Wales the ratio of the number of females employed in factories to the number of males during 1886 was about one to seven; in 1891 one to six; in 1903 it became about one to four; and is now rather lower than one to three. In Victoria the ratio of females to males during the year 1886 was about one to five. Five years later (1891) it was somewhat less, but in 1896 had increased to about one woman to three men, and at present is slightly under one to two. In the remaining States the ratios during 1912 were—Queensland and South Australia—a little under one female employed to every four males, Western Australia one to five, and in Tasmania one to six. The proportion for the whole of the Commonwealth was just over one to three. The employment of women is, however, largely confined to a few trades.

The great prosperity in clothing and textile industries is one of the main causes of increase in female employment. Certain trades are specifically known as women's trades, such as clothing and textile trades, preparation of food, book-binding, and lighter work connected with the drug trade, as for example wrapping. In common with commercial establishments, a considerable number of women are also employed as clerks and typists in factories.

(i.) *Average Number of Males and Females Employed, 1908 to 1912.* The following table shews the average number of male and female employees in factories in each State from 1908 to 1912:—

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN MANUFACTURING INDUSTRIES, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
MALES.					
New South Wales ...	67,616	69,184	75,384	82,083	88,178
Victoria ...	60,873	62,822	66,309	73,573	77,565
Queensland ...	24,639	24,877	*27,165	*29,832	*33,254
South Australia ...	19,640	20,753	21,864	22,629	23,083
Western Australia ...	10,453	10,703	11,654	13,212	13,805
Tasmania ...	7,334	8,132	8,277	8,737	8,391
Commonwealth ...	190,555	196,471	210,653	230,066	244,276

AVERAGE NUMBER OF MALES AND FEMALES EMPLOYED IN
MANUFACTURING INDUSTRIES, 1908 to 1912—Continued.

State.	1908.	1909.	1910.	1911.	1912.
FEMALES.					
New South Wales ...	21,482	22,518	24,327	26,541	27,383
Victoria ...	32,935	34,533	35,867	38,375	38,543
Queensland ...	4,561	4,627	*6,779	*7,324	7,694
South Australia ...	4,596	4,956	5,146	5,256	5,417
Western Australia ...	1,972	2,123	2,453	2,587	2,577
Tasmania ...	1,393	1,433	1,703	1,561	1,566
Commonwealth ...	66,939	70,190	76,275	81,644	83,180

* See Note (*) to § 3, 1 (i).

It will be seen that during the years specified there has been for the whole Commonwealth a total increase in the number of male employees of 53,721, or an annual average of 13,430, and in the number of female employees a total increase of 16,241, or an annual average of 4060.

(ii.) *Average Number of Males and Females Employed per 10,000 of Mean Population, 1908 to 1912.* The following table shews the average number of male and female employees per 10,000 of the mean male and female population respectively in each State from 1908 to 1912 :—

AVERAGE NUMBER OF MALE AND FEMALE FACTORY EMPLOYEES PER 10,000
OF MEAN MALE AND FEMALE POPULATION RESPECTIVELY, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
MALES.					
New South Wales ...	816	826	883	947	967
Victoria ...	1000	1012	1045	1118	1,145
Queensland ...	818	801	*843	*892	970
South Australia ...	1015	1040	1071	1084	1,077
Western Australia ...	707	712	754	805	802
Tasmania ...	765	835	848	900	854
Commonwealth ...	876	887	929	986	1,009
FEMALES.					
New South Wales ...	288	296	312	334	332
Victoria ...	521	539	554	579	567
Queensland ...	181	178	*252	*262	266
South Australia ...	244	257	261	260	261
Western Australia ...	179	188	210	211	199
Tasmania ...	152	154	182	167	168
Commonwealth ...	332	341	363	379	374

* See note (*) to § 3, 1 (i).

3. **Rate of Increase for each Sex.**—The percentages of annual increase during the years 1908 to 1912 in the average number of males and females employed in manufacturing industries in the several States and the Commonwealth are shewn below:—

PERCENTAGES OF ANNUAL INCREASE IN NUMBERS OF MALE AND FEMALE EMPLOYEES, 1908 to 1912.

State.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.
MALES.					
	%	%	%	%	%
New South Wales ...	2.52	2.32	9.01	8.89	7.37
Victoria ...	1.98	3.20	5.55	10.95	5.43
Queensland ...	6.24	0.97	*9.20	*9.82	11.47
South Australia ...	6.61	5.67	5.35	3.60	1.91
Western Australia ...	-2.04	2.39	8.89	13.37	4.49
Tasmania ...	5.19	10.88	1.78	5.56	-3.96
Commonwealth ...	3.06	3.10	7.24	9.23	6.15
FEMALES.					
	%	%	%	%	%
New South Wales ...	4.72	4.82	8.04	9.10	3.17
Victoria ...	5.52	4.85	3.86	6.99	0.44
Queensland ...	-4.24	1.45	*46.51	*8.04	4.99
South Australia ...	7.43	7.83	3.83	2.14	3.06
Western Australia ...	0.92	7.66	15.54	5.46	-0.39
Tasmania ...	12.61	2.87	18.84	-8.34	0.32
Commonwealth ...	4.66	4.86	8.67	7.04	1.88

Note.—The minus (—) sign indicates decrease. * See note (*) to § 3. 1 (i).

The above table shews that in each State for the first three years of the quinquennial period under discussion, with a few exceptions, there has been relatively a larger increase in the number of female than in the number of male employees. This position, however, was reversed in 1911 and 1912, when the percentage of increase of male employees exceeded that of female in every State, with the exception of New South Wales in 1911 and South Australia in 1912. This matter is referred to further in the following paragraph.

4. **Ratio of Female Employment in Factories.**—The extent to which females are employed in the factories of the Commonwealth may perhaps be best shewn by giving the number of females to every 100 male employees for each State for each year from 1908 to 1912 inclusive:—

NUMBER OF FEMALES PER 100 MALES IN AUSTRALIAN FACTORIES, 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
1908	31.77	54.10	18.51	23.36	18.86	18.99	35.12
1909	32.55	54.97	18.60	23.88	19.74	17.62	35.73
1910	32.26	54.09	*24.95	23.54	21.05	20.58	36.20
1911	32.32	52.16	*24.55	23.20	19.58	17.87	35.48
1912	31.05	49.69	*23.14	23.47	18.67	18.66	34.05

* See note (*) to § 3, 1 (i).

This table shews that the proportion of the sexes has not materially changed during the past five years, the ratio of females to every hundred males employed increasing only from 35.12 in 1908 to 35.48 in 1911. The 1912 figures shew the reduced ratio of 34.05. The tables given in the succeeding paragraph shew that these comparatively high ratios have been due not so much to the incursion of female labour into what may be termed men's trades, as to the activity in those trades in which women are ordinarily engaged, more especially in dressmaking, millinery, etc.

5. Employment of Females in Particular Industries, 1912.—The employment of women in manufacturing industries in Australia is largely confined to a few trades, of which the more important are comprised in Classes VI., VII., and VIII., viz., in connection with food, drink, etc., clothing and textile fabrics, and books, paper, printing etc. The following table shews the average number of females employed in each of these classes during the year 1912 in each State, and also shews the percentages of the average number so employed on the total average number of females employed in all classes of factories :—

**AVERAGE NUMBER OF FEMALES EMPLOYED IN PARTICULAR INDUSTRIES,
AND PERCENTAGES ON AVERAGE TOTAL EMPLOYED, 1912.**

Class.	N.S.W.	Vict.	Q'land.	S. Aust.	W.Aust.	Tas.	Cwltth.
AVERAGE NUMBER.							
VI. Food, drink, etc. ...	3,476	3,434	599	519	170	260	8,458
VII. Clothing and textile fabrics ...	19,273	30,024	6,097	4,088	2,057	1,123	62,662
VIII. Books, paper, printing, etc. ...	2,390	2,303	659	528	228	89	6,197
All other classes ...	2,244	2,782	339	282	132	94	5,863
Total ...	27,383	38,543	7,694	5,417	2,577	1,566	83,180

PERCENTAGES ON TOTAL AVERAGE FEMALE EMPLOYEES.

VI. Food, drink, etc. ...	12.70	8.91	7.79	9.58	6.60	16.60	10.17
VII. Clothing and textile fabrics ...	70.38	77.90	79.24	75.47	79.82	71.71	75.33
VIII. Books, paper, printing, etc. ...	8.73	5.97	8.57	9.74	8.85	5.69	7.45
All other classes ...	8.19	7.22	4.40	5.21	4.73	6.00	7.05
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be seen that by far the greater part of the total number of females employed in factories work in one or other of the three classes of industry indicated, Class VII. being the most important. The classification of the employment of females in the several industries in that class, and the ratio they bore to males so employed, are shewn in the following table:—

FEMALE EMPLOYMENT IN EACH INDUSTRY IN CLASS VII., DURING 1912.

Industry.	New South Wales.			Victoria.			Other States.		
	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.	Males.	Femls.	Femls. Per 100 Males.
Woollen & tweed mills	416	721	173	754	918	122	239	331	138
Boots and shoes ...	2,779	1,612	58	4,317	2,457	57	1,442	734	51
Slop clothing	3,257	8,509	261	2,503	8,088	323	2,238	6,473	289
Clothing (tailoring) }									
Dressmaking & millin'y	98	4,952	5,053	256	9,529	3,722	28	3,613	12,904
Dyeworks and cleaning	40	31	77	64	89	139	25	16	64
Furriers ...	34	36	106	58	133	229	3	7	233
Hats and caps ...	546	1,051	192	715	1,088	152	92	163	176
Waterproof and oilskin	32	88	275	67	254	379	...	...	...
Shirts, ties, and scarfs	167	2,000	1,198	393	6,954	1,769	109	1,872	1,717
Rope and cordage ...	263	8	3	499	332	67	153	82	54
Tents and tarpaulins...	184	265	144	109	62	57	108	74	69
Other ...	...	...	...	11	120	1,091	...	...	...
Total Class VII....	7,816	19,273	247	9,746	30,024	308	4,437	13,365	301

§ 5. Child Labour in Factories.

1. **Conditions of Child Labour.**—The employment of young persons in factories in each State of the Commonwealth is regulated by Acts of Parliament in a similar manner to the employment of female labour. Excepting under special circumstances, children under a certain age may not be employed in factories. The minimum age in all the States is 14, with the exception of South Australia, where it is 13 years, and Victoria, where the minimum for females is 15 years. Other restrictions on the employment of young persons in factories are more particularly referred to in a later part of this book. (See Section XXVII. *Industrial Unionism and Industrial Legislation*.) The general object of the restrictions imposed is to assure that a proper period shall be devoted to primary education, and that the early years of toil shall not exhaust the worker before the attainment of full growth.

2. **Average Number of Children Employed in Factories, 1908 to 1912.**—In the statistical compilations of the various States the term "child" may be taken to denote any person under sixteen years of age, excepting in New South Wales, where it denoted, for years prior to 1907, any person under fifteen. The following table shews the average number of children of each sex employed in manufacturing industries in each State during the years 1908 to 1912. During the period under review, there was a decrease in the average number employed in New South Wales and Victoria of 16 in the former, and 1722 in the latter State, the other States all shewed an increase, amounting in all to 515 persons.

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
MALES.					
New South Wales ...	2,475	2,433	2,452	2,474	2,225
Victoria ...	3,049	2,817	2,753	2,623	2,652
Queensland ...	1,034	1,001	*1,031	*1,176	1,114
South Australia ...	1,179	1,094	1,082	999	1,078
Western Australia ...	289	289	340	368	356
Tasmania ...	239	258	282	280	322
Commonwealth ...	8,265	7,892	7,940	7,920	7,747

AVERAGE NUMBER OF CHILDREN EMPLOYED IN FACTORIES,
1908 TO 1912.

State.	1908.	1909.	1910.	1911.	1912.
FEMALES.					
New South Wales ...	1,859	1,973	2,025	2,267	2,093
Victoria ...	3,065	2,496	2,174	1,937	1,740
Queensland ...	583	556	*733	*818	764
South Australia ...	568	577	702	555	704
Western Australia ...	251	242	266	293	334
Tasmania ...	135	128	96	131	121
Commonwealth ...	6,461	5,972	5,996	6,001	5,756

TOTAL.

New South Wales ...	4,334	4,406	4,477	4,741	4,318
Victoria ...	6,114	5,313	4,927	4,560	4,392
Queensland ...	1,617	1,557	*1,764	*1,994	1,878
South Australia ...	1,747	1,671	1,784	1,554	1,782
Western Australia ...	540	531	606	661	690
Tasmania ...	374	386	378	411	443
Commonwealth ...	14,726	13,864	13,936	13,921	13,503

* See Note (*) to § 3. 1 (i).

3. **Percentage of Children to Total Persons Employed.**—The foregoing table shews a general increase in several of the States in the number of children employed in factories during the past quinquennial period. These increases, however, when examined in conjunction with the total number of persons employed, shew that in every State, with the exception of Tasmania, a fairly regular decrease in the percentage of child labour is in evidence. This decrease is particularly noticeable in Victoria, the percentage falling from 6.52 in 1908 to 3.78 in 1912.

PERCENTAGE OF CHILDREN IN FACTORIES TO TOTAL NUMBER OF EMPLOYEES,
1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
	%	%	%	%	%
New South Wales ...	4.86	4.80	4.49	4.36	3.74
Victoria ...	6.52	5.46	4.82	4.07	3.78
Queensland ...	5.54	5.28	5.20	5.37	4.59
South Australia ...	7.21	6.50	6.60	5.57	6.25
Western Australia ...	4.35	4.14	4.30	4.18	4.21
Tasmania ...	4.29	4.04	3.79	3.99	4.45
Commonwealth ...	5.72	5.20	4.86	4.47	4.12

4. **Industries Employing Child Labour, 1912.**—The employment of children is largely confined to a limited number of industries, the most important of which are specified in the table below, which shews the average number of children of each sex employed in the several industries indicated in each State during the year 1912 :—

NUMBER OF CHILDREN ENGAGED IN VARIOUS INDUSTRIES, 1912.

Class.	Industry.	N.S.W.		Victoria.		Q'land.		S. Aust.		W.A.		Tas.		C'w'lth.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III.	Bricks, tiles, pottery and earthenware ...	61	1	35	...	8	...	21	...	9	1	7	...	141	2
IV.	Joinery, boxes, cases, etc. ...	106	1	84	...	25	...	49	1	14	...	4	...	282	2
V.	Engin'ring, ironworks, and foundries ...	221	3	300	...	56	...	76	...	62	...	17	...	732	3
"	Galvanised iron-working and tinsmithing ...	74	1	90	22	73	1	72	10	...	...	4	...	313	34
"	Railway carriages, railway & tramway work-shops ...	57	...	73	...	44	...	102	...	15	...	...	...	291	...
VI.	Biscuits, cakes, etc. ...	161	113	66	30	18	4	3	3	15	8	20	...	283	158
"	Confectionery ...	40	64	25	29	22	27	18	23	6	12	...	...	111	155
"	Jams, pickles, sauces, etc. ...	23	17	49	35	11	...	46	34	4	1	44	18	177	105
"	Aerated waters, cordials, etc. ...	55	3	56	...	55	6	12	1	7	...	3	...	188	10
"	Tobacco, cigars, etc. ...	48	50	30	10	3	3	2	4	2	4	...	...	85	71
VII.	Boots and shoes ...	100	160	163	135	39	44	24	43	8	9	8	7	342	398
"	Clothing (tailoring and slop) ...	79	508	82	269	74	277	26	195	13	74	8	14	282	1,337
"	Dressmaking and millinery ...	1	392	7	498	...	120	...	114	1	138	...	49	91	311
"	Hats and caps ...	36	106	36	31	4	20	5	9	...	...	...	...	81	166
"	Shirts, ties, scarfs, etc. ...	6	183	8	331	7	130	1	96	2	40	...	4	24	784
"	Woollen, tweed, and cotton mills ...	14	37	90	82	...	...	7	29	...	...	14	7	125	155
VIII.	Electrotyping, printing and binding ...	350	177	453	102	197	92	94	21	57	30	47	11	1,196	439
"	Paper making, paper boxes, etc. ...	30	79	11	28	1	12	29	85	1	4	...	...	72	208
XI.	Coach & wagon building, etc. ...	76	1	124	...	42	...	51	...	7	...	15	...	315	1
XIII.	Billiard tables, cabinet making and furniture ...	69	1	63	...	67	4	52	...	18	...	22	...	291	5

5. **Apprenticeship.**—It is obvious that the age of apprenticeship in each State must be limited by the conditions governing the employment of child labour in factories. The early Apprentices' Acts in some of the States are apparently in conflict on this point with the Factories Acts. The statutes limiting the age at which children may begin to work may be regarded as applicable by way of preventing too early apprenticeship, so also may those directing that education be continued up to a certain age or standard.

Indentures must be entered into specifying the conditions of the employment. Apprenticeships may not exceed seven years in duration, and become inoperative at twenty-one years of age, or in the case of women, on marriage.

The Arbitration Courts and Wages Boards have power to limit the number of apprentices which may be taken into a factory and specify the term of apprenticeship. No general statistics of the number of apprentices in Australia have been collected up to the present time. Other enactments relating to child labour are referred to in Section XXVII. of this book, *Industrial Unionism and Industrial Legislation*.

§ 6. Amount of Wages Paid and Value of Production.

1. **Introduction.**—The importance of the manufacturing industries of the Commonwealth is indicated by the fact that the total value of the output for 1912 was £148,775,407, of which amount the sum of £88,275,620 represents the value of the raw materials used. The difference between these two amounts, viz., £60,499,787, represents the amount by which the value of the raw materials was enhanced in the process of manufacture. The total amount of salaries and wages paid in factories during 1912 was £31,287,492.

2. **Amount of Salaries and Wages Paid, 1912.**—The total amount of salaries and wages paid during the year 1912 in various classes of factories in the Commonwealth (excluding all sums drawn by working proprietors) is shewn in the following table.

It has been found impracticable to shew satisfactorily in this book the rates of wages paid to employees in various classes of manufacturing industries in Australia, owing to the facts—firstly, that the rates in many industries vary very considerably in different parts of the country; and secondly, that the necessary particulars are not collected by the several States on a uniform basis; while for some of the States the information given is meagre and unsatisfactory.

AMOUNT OF SALARIES AND WAGES PAID IN FACTORIES IN COMMONWEALTH, 1912.*

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	313,753	304,442	70,460	92,163	17,869	17,023	815,710
II. Treating oils and fats, animal, vegetable, etc. ...	74,352	67,824	15,218	24,652	7,888	2,957	192,591
III. Processes in stone, clay, glass, etc. ...	695,304	455,431	59,566	147,161	77,166	18,689	1,453,317
IV. Working in wood ...	896,507	733,264	536,372	206,491	793,678	170,547	3,336,859
V. Metal works, machinery, etc. ...	3,302,604	2,292,755	846,860	1,034,313	449,915	254,342	8,180,789
VI. Connected with food and drink, etc. ...	1,368,832	1,348,300	1,079,975	352,111	207,961	113,316	4,470,495
VII. Clothing and textile fabrics, etc. ...	1,806,424	2,289,292	450,519	317,423	194,982	90,567	5,149,207
VIII. Books, paper, printing and engraving ...	993,444	880,357	303,940	180,653	163,630	81,994	2,604,018
IX. Musical instruments, etc. ...	49,432	22,135	...	1,934	...	...	73,501
X. Arms and explosives ...	24,021	60,074	...	356	...	...	84,451
XI. Vehicles and fittings, saddlery and harness, etc. ...	425,391	417,902	100,558	153,906	70,968	35,793	1,204,418
XII. Ship and boat building and repairing ...	427,045	30,499	12,960	22,259	2,639	6,431	501,833
XIII. Furniture, bedding and upholstery ...	404,703	310,300	105,261	124,217	57,323	25,281	1,027,085
XIV. Drugs, chemicals, and by-products ...	140,122	162,971	4,739	60,679	35,169	...	403,680
XV. Surgical and other scientific instruments ...	8,964	8,128	2,270	834	1,640	...	21,836
XVI. Jewellery, timepieces, and platedware ...	91,579	104,274	11,296	21,828	8,882	9,705	240,564
XVII. Heat, light, and power ...	149,254	405,919	86,050	112,132	68,005	33,601	1,154,961
XVIII. Leatherware, n.e.i. ...	45,486	45,143	4,941	2,154	2,632	...	100,356
XIX. Minor wares, n.e.i. ...	74,835	163,234	8,080	14,487	8,797	2,088	271,521
Total ...	11,592,052	10,102,244	3,699,065	2,869,653	2,169,144	855,334	31,287,492

* Excluding all amounts drawn by working proprietors.

The maximum amount of salaries and wages paid in any particular class was in Class V., the amount being £8,180,789, or 26.15 per cent. on the total amount; the minimum amount was in Class XV., £21,836, or 0.07 per cent. on the total amount. The State in which the largest amount was paid was New South Wales. The following statement shews the total amount of salaries and wages paid, and the average amount paid per employee in each State, during each of the years 1908 to 1912; the figures are exclusive of the amounts drawn from the business by working proprietors:—

AMOUNT OF SALARIES AND WAGES PAID AND AVERAGE AMOUNT PER ANNUM PAID PER EMPLOYEE, 1908 to 1912.

Year.	Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
		£	£	£	£	£	£	£
1908	Total amount paid ...	7,218,556	6,380,296	2,192,015	1,924,974	1,474,934	693,592	19,884,367
	Average per employee ...	84.72	71.59	78.28	83.55	123.56	84.43	80.99
1909	Total amount paid ...	7,665,125	6,807,851	2,324,005	2,028,691	1,506,360	779,624	21,111,656
	Average per employee ...	87.27	73.57	82.00	83.08	122.08	86.44	82.97
1910	Total amount paid ...	8,687,007	7,600,932	2,830,704	2,323,398	1,683,657	740,463	23,866,161
	Average per employee ...	90.78	78.18	86.79	90.44	123.93	78.81	87.04
1911	Total amount paid ...	10,047,656	8,911,019	3,113,835	2,645,386	1,982,883	827,592	27,528,371
	Average per employee ...	96.35	83.48	87.15	99.64	129.80	84.47	92.26
1912	Total amount paid ...	11,592,052	10,102,244	3,699,065	2,869,653	2,169,144	855,334	31,287,492
	Average per employee ...	104.44	91.19	93.88	105.62	136.67	90.41	99.74

In comparing the figures in the above table regard should be paid to the nature of certain industries which are carried on to a greater extent in some States than in others (see § 2 hereof). In Victoria, for instance, where, with the exception of Tasmania, the average is lowest, there are a large number of factories and hands employed in Class VII., and in that class wages are low, a great many women and children being employed. The position occupied by Western Australia is principally due to the high ratio of male to female employees in that State.

It will be noted that there has been a persistent increase in the average wage paid per employee in each of the States during the period under review, despite the tendency of the number of females employed in certain industries to increase at a higher ratio than males. Taking the Commonwealth as a whole, during the period 1908-12 there has been an increase of 57.35 per cent. on the total amount of wages paid and 23.15 per cent. on the average paid per employee.

The following tables shew the approximate amount paid in salaries and wages to males and females in each class of industry in each State during 1912, and total amounts paid to each sex in New South Wales and Victorian factories during the last four years, in South Australia and Tasmania during 1911 and 1912, and for Queensland and Western Australia during 1912:—

**AMOUNT* OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS
EMPLOYED IN EACH CLASS OF INDUSTRY IN THE SEVERAL STATES OF
THE COMMONWEALTH DURING 1912.**

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
MALES.							
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	310,568	303,173	70,374	92,262	17,557	17,023	810,957
II. Treating oils and fats, animal, vegetable, etc.	65,960	65,686	14,850	24,120	7,888	2,774	181,278
III. Processes in stone, clay, glass, etc.	692,634	453,055	59,365	146,917	76,959	18,689	1,447,619
IV. Working in wood	892,507	730,895	533,549	205,512	793,678	169,905	3,326,046
V. Metal works, machinery, etc.	3,291,922	2,281,532	844,923	1,031,622	448,967	253,823	8,152,789
VI. Connected with food and drink, etc.	1,210,164	1,186,116	1,058,509	334,153	199,665	104,130	4,092,737
VII. Clothing and textile fabrics, etc.	869,592	976,458	198,281	144,848	75,613	49,200	2,313,992
VIII. Books, paper, printing and engraving	887,284	776,990	279,190	161,097	152,517	79,086	2,336,164
IX. Musical instruments, etc.	47,440	21,616	...	1,934	...	...	70,990
X. Arms and explosives	23,556	30,987	...	356	...	...	54,899
XI. Vehicles and fittings, saddlery and harness, etc.	419,750	412,949	99,836	152,547	70,274	34,913	1,190,269
XII. Ship and boat building and repairing	426,955	30,499	12,960	22,259	2,639	6,431	501,743
XIII. Furniture, bedding and upholstery	384,573	295,661	101,238	123,383	55,856	24,213	984,924
XIV. Drugs, chemicals and by-products	114,352	147,385	3,604	58,299	34,139	...	357,779
XV. Surgical and other scientific instruments	7,722	7,641	2,192	834	1,517	...	19,906
XVI. Jewellery, timepieces and platedware	85,897	99,745	10,215	21,268	8,762	2,705	228,592
XVII. Heat, light and power	446,574	392,332	86,050	110,944	68,005	33,409	1,137,314
XVIII. Leatherware, n.e.i.	41,208	36,083	3,883	1,897	2,358	...	85,429
XIX. Minor wares, n.e.i.	65,075	139,810	7,172	13,590	7,924	1,797	235,368
Total ...	10,283,733	8,388,613	3,386,191	2,647,842	2,024,318	798,098	27,528,795

* Exclusive of amount drawn by working proprietors.

AMOUNT OF SALARIES AND WAGES PAID TO MALE AND FEMALE HANDS
EMPLOYED IN EACH CLASS OF INDUSTRY, Etc.—Continued.

Class of Industry.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	C'wealth.
FEMALES.							
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	£ 3,185	£ 1,269	£ 86	£ 213	£ ...	£ ...	£ 4,753
II. Treating oils and fats, animal, vegetable, etc.	8,392	2,138	368	532	...	183	11,613
III. Processes in stone, clay, glass, etc.	2,670	2,376	201	244	207	...	5,698
IV. Working in wood	4,000	2,369	2,823	979	...	642	10,813
V. Metal works, machinery, etc.	10,692	11,223	1,937	2,691	948	519	28,000
VI. Connected with food and drink, etc.	158,668	162,184	21,466	17,958	8,296	9,186	377,758
VII. Clothing and textile fabrics, etc.	936,832	1,312,834	252,238	172,575	119,369	41,367	2,835,215
VIII. Books, paper, printing and engraving	106,160	103,367	24,750	19,556	11,113	2,908	267,854
IX. Musical instruments, etc.	1,992	519	...	...	...	...	2,511
X. Arms and explosives	465	29,087	...	...	...	...	29,552
XI. Vehicles and fittings, saddlery & harness, etc.	5,641	4,953	722	1,259	694	880	14,149
XII. Ship and boat building and repairing	90	...	...	...	...	...	90
XIII. Furniture, bedding, and upholstery	20,130	14,639	4,023	834	1,467	1,068	42,161
XIV. Drugs, chemicals, and by-products	25,770	15,586	1,135	2,380	1,030	...	45,901
XV. Surgical and other scientific instruments	1,242	487	78	...	123	...	1,930
XVI. Jewellery, timepieces and platedware	5,682	4,529	1,081	560	120	...	11,972
XVII. Heat, light, and power	2,680	13,587	...	1,188	...	192	17,647
XVIII. Leatherware, n.e.	4,278	9,060	1,058	257	274	...	14,927
XIX. Minor wares, n.e.i.	9,760	23,424	908	897	873	291	36,153
Total	1,308,319	1,713,631	312,874	222,123	144,514	57,236	3,758,697

* Exclusive of amount drawn by working proprietors.

AMOUNT* OF SALARIES AND WAGES PAID TO MALES AND FEMALES IN
FACTORIES IN CERTAIN STATES, 1909, 1910, 1911 and 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'with.
MALES.							
1909. Amount paid	£ 6,923,732	5,607,703	...	...	...	...	...
Per cent. on total	89.02	82.37	...	...	...	...	...
Average per employee	£ 103.96	95.61	...	...	...	...	...
1910. Amount paid	£ 7,724,310	6,273,921	...	...	...	...	...
Per cent. on total	88.92	82.54	...	...	...	...	...
Average per employee	£ 107.84	101.20	...	...	...	...	...
1911. Amount paid	£ 8,917,577	7,357,735	...	2,430,263	...	773,900	...
Per cent. on total	88.76	82.57	...	91.87	...	93.51	...
Average per employee	£ 114.22	106.62	...	113.66	...	93.67	...
1912. Amount paid	£ 10,283,733	8,388,613	3,386,191	2,647,842	2,024,318	796,098	27,528,795
Per cent. on total	88.71	83.04	91.54	92.25	93.34	93.31	87.99
Average per employee	£ 122.50	115.18	106.57	121.41	152.02	100.85	118.86
FEMALES.							
1909. Amount paid	£ 841,393	1,200,148	...	...	...	...	...
Per cent. on total	10.98	17.63	...	...	...	...	...
Average per employee	£ 37.91	35.41	...	...	...	...	...
1910. Amount paid	£ 962,697	1,327,011	...	...	...	...	...
Per cent. on total	11.08	17.46	...	...	...	...	...
Average per employee	£ 40.08	37.67	...	...	...	...	...
1911. Amount paid	£ 1,130,079	1,553,284	...	215,123	...	53,692	...
Per cent. on total	11.24	17.43	...	8.13	...	6.49	...
Average per employee	£ 43.10	41.16	...	41.44	...	34.98	...
1912. Amount paid	£ 1,308,319	1,713,631	312,874	222,123	144,514	57,236	3,758,697
Per cent. on total	11.29	16.96	8.46	7.75	6.66	6.69	12.10
Average per employee	£ 48.39	45.15	41.00	41.43	56.56	37.00	45.79

* Exclusive of amounts drawn by working proprietors.

A further analysis of salaries and wages paid during 1912 is given in the following table, the amounts paid to managers, overseers, etc., being differentiated from those paid to other employees. As previously mentioned, amounts drawn by working proprietors are excluded in all cases.

DETAILS OF SALARIES AND WAGES PAID TO MANAGERS, OVERSEERS, ETC., AND OTHER EMPLOYEES IN FACTORIES DURING 1912.

Class of Industry.	Salaries and Wages Paid to—						
	Managers, Overseers, Accountants, and Clerks. (a)		All Other Employees. (b)		All Employees.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	£ 81,792	£ 1,591	£ 729,165	£ 3,162	£ 810,957	£ 4,753	£ 815,710
II. Treating oils and fats, animal, vegetable, etc.	40,963	2,564	141,215	9,049	181,278	11,613	192,891
III. Processes in stone, clay, glass, etc.	120,082	2,317	1,327,537	3,381	1,447,619	5,698	1,453,317
IV. Working in wood	291,167	7,185	3,034,879	3,628	3,326,046	10,813	3,336,559
V. Metal works, machinery, etc.	617,237	13,962	7,535,552	14,038	8,152,789	28,000	8,180,789
VI. Connected with food and drink, etc.	717,770	25,686	3,374,967	352,072	4,092,737	377,758	4,470,495
VII. Clothing and textile fabrics, etc.	320,493	112,412	1,993,499	2,722,803	2,313,992	2,835,215	5,149,207
VIII. Books, paper, printing and engraving	402,387	28,740	1,933,777	239,114	2,336,164	267,854	2,604,018
IX. Musical instruments, etc.	5,765	650	65,225	1,861	70,990	2,511	73,501
X. Arms and explosives	7,448	727	47,451	28,825	54,899	29,552	84,451
XI. Vehicles and fittings, saddlery and harness, etc.	90,857	5,698	1,099,412	8,451	1,190,269	14,149	1,204,418
XII. Ship and boat building and repairing	38,360	90	463,383	...	501,743	90	501,833
XIII. Furniture bedding, & upholstery	56,060	4,428	928,864	37,733	984,924	42,161	1,027,085
XIV. Drugs, chemicals, and by-products	71,416	5,691	286,363	40,210	357,779	45,901	403,680
XV. Surgical & other scientific instruments	3,147	268	16,759	1,662	19,906	1,930	21,836
XVI. Jewellery, timepieces, and platedware	17,090	2,503	211,502	9,469	228,592	11,972	240,564
XVII. Heat, light, and power	167,436	2,433	969,878	15,214	1,137,314	17,647	1,154,961
XVIII. Leatherware, n.e.i.	11,860	919	73,569	14,008	85,429	14,927	100,356
XIX. Minor wares, n.e.i.	27,896	2,220	207,473	33,933	235,368	36,153	271,521
Total	3,088,326	220,084	24,440,469	3,538,613	27,528,795	3,758,697	31,287,492
Average paid per employee	176.57 (c)	74.66 (c)	116.07 (c)	45.16 (c)	118.87 (d)	45.79 (d)	99.74 (d)

(a) Exclusive of amount paid to accountants and clerks in Queensland. (b) Including amount paid to accountants and clerks in Queensland. (c) Exclusive of Queensland. (d) Including Queensland.

3. Value of Fuel and Light used in Factories, 1912.—The amount expended in factories on fuel and light is of considerable importance; in 1912 it amounted to £3,047,384, being an increase on the previous year's figures of £294,434. The classes of industry in which fuel was most extensively used were Class V., Metal Works, Machinery, etc., £1,031,533; Class VI., Connected with Food, Drink, etc., £571,724; Class XVII., Heat, Light, Power, etc., £517,017, of which amount £430,902 was expended on generating

electric light and power; and Class III., £403,976, of which £317,734 was represented in brick and pottery works, etc., and glass factories. The following tables shew the value of fuel and light used in the different classes of industry in the several States of the Commonwealth during 1912, and of the total used for each of the last five years:—

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH, 1912.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	39,712	31,361	11,196	11,203	1,377	2,014	96,863
II. Treating oils and fats, animal, vegetable, etc. ...	14,652	11,529	1,968	7,298	640	330	36,417
III. Processes in stone, clay, glass, etc. ...	197,914	114,138	10,052	52,584	22,707	6,581	403,976
IV. Working in wood ...	20,943	12,921	8,379	3,656	1,982	2,170	50,251
V. Metal wks., machinery, etc.	532,108	144,048	46,877	169,567	29,430	109,513	1,031,533
VI. Connected with food and drink, etc. ...	163,483	171,288	137,570	55,670	30,434	13,279	571,724
VII. Clothing and textile fabrics, etc. ...	32,153	60,877	5,915	7,842	3,666	1,797	112,250
VIII. Books, paper, printing, and engraving ...	28,332	35,571	11,287	7,370	5,247	1,222	89,029
IX. Musical instruments, etc. ...	376	113	...	24	...	...	513
X. Arms and explosives ...	1,682	1,908	...	5	...	...	3,595
XI. Vehicles and fittings, saddlery and harness, etc. ...	11,843	12,714	1,441	5,580	2,747	1,065	35,390
XII. Ship and boat building and repairing ...	10,269	973	240	559	15	118	12,174
XIII. Furniture, bedding, and upholstery ...	6,748	6,571	2,487	4,061	1,360	725	21,952
XIV. Drugs, chemicals, and by-products ...	16,445	12,097	403	7,185	3,840	90	40,040
XV. Surgical and other scientific instruments ...	186	420	80	22	42	...	750
XVI. Jewellery, timepieces, and plated ware ...	1,959	2,907	295	776	164	83	6,184
XVII. Heat, light, and power ...	277,541	50,804	23,358	29,670	87,193	48,451	517,017
XVIII. Leatherware, n.e.i. ...	...	823	1,294	132	25	73	2,347
XIX. Minor wares, n.e.i. ...	2,972	11,842	98	336	108	23	15,379
Total ...	1,360,141	683,376	261,978	363,403	191,025	187,461	3,047,384

VALUE OF FUEL AND LIGHT USED IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1908 ...	876,565	538,571	196,908	309,483	141,349	* 114,000	2,176,876
1909 ...	940,840	566,768	194,776	269,646	140,111	115,864	2,228,005
1910 ...	1,184,282	639,135	216,890	313,731	150,311	130,962	2,635,311
1911 ...	1,242,613	637,497	222,560	338,565	176,659	140,816	2,758,710
1912 ...	1,360,141	683,376	261,978	363,403	191,025	187,461	3,047,384

* Figures estimated.

4. **Value of Raw Materials used in Factories, 1912.**—The total value of raw materials worked up (*i.e.*, exclusive of fuel, lubricants, etc.) in factories in the Commonwealth during 1912 was £88,275,620, which represents 59.33 per cent. of the total value of the finished products. (See next paragraph hereof.) The following table shews the value of the raw materials worked up in various classes of industry in each State during the year 1912:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH, 1912.

Class of Industry.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	3,880,346	2,463,407	1,387,212	719,590	161,970	166,433	8,778,958
II. Treating oils and fats, animal, vegetable, etc. ...	783,901	428,229	77,035	121,497	57,207	8,469	1,476,338
III. Processes in stone, clay, glass, etc. ...	340,550	211,925	10,224	43,992	17,670	6,488	630,849
IV. Working in wood ...	2,260,095	1,070,193	782,101	743,142	104,161	125,800	5,085,492
V. Metal wks, machinery, etc. ...	8,678,576	3,036,937	1,393,082	2,611,605	712,677	1,000,982	17,433,859
VI. Connected with food and drink, etc. ...	14,590,133	11,484,130	6,159,455	2,578,709	821,102	697,056	36,330,585
VII. Clothing and textile fabrics, etc. ...	2,842,762	4,421,265	789,128	521,225	278,805	125,095	8,978,280
VIII. Books, paper, printing, and engraving ...	898,053	903,714	148,429	188,210	98,698	49,341	2,286,445
IX. Musical instruments, etc. ...	68,908	16,160	...	1,545	...	...	86,613
X. Arms and explosives ...	13,192	131,511	...	800	...	...	145,503
XI. Vehicles and fittings, saddlery and harness, etc. ...	433,249	417,580	130,470	211,147	71,471	45,043	1,308,960
XII. Ship and boat building and repairing ...	189,918	15,080	8,416	11,812	3,351	7,134	234,811
XIII. Furniture, bedding, and upholstery ...	567,159	509,997	115,316	109,511	73,960	27,795	1,403,738
XIV. Drugs, chemicals, and by-products ...	544,730	631,310	14,774	235,840	126,291	885	1,553,830
XV. Surgical and other scientific instruments ...	7,296	6,843	2,179	150	915	...	17,383
XVI. Jewellery, timepieces, and plated ware ...	130,981	187,411	14,465	24,672	20,524	3,876	381,929
XVII. Heat, light, and power ...	564,232	326,609	26,711	54,999	23,863	19,880	1,016,294
XVIII. Leatherware, n.e.i. ...	140,601	182,434	9,080	3,929	3,230	...	339,274
XIX. Minor wares, n.e.i. ...	188,659	557,567	10,877	16,735	10,300	2,341	786,479
Total ...	37,122,441	27,002,302	11,078,954	8,199,110	2,586,195	2,286,618	88,275,620

The class in which the maximum value of raw materials was used was Class VI., "Connected with Food and Drink, etc.," the value being £36,330,585. The next important class in order of value was Class V., "Metal Works, Machinery, etc.," in which raw materials to the value of £17,433,859 were used. The class in which the minimum value appears is Class XV., "Surgical and other Scientific Instruments," the value being only £17,383. The year 1910 was the first for which reliable and complete returns were collected in every State relating to the value of raw materials worked up in factories; the following table, however, gives particulars for the five years ended 1912, so far as information is available:—

VALUE OF RAW MATERIALS WORKED UP IN FACTORIES IN COMMONWEALTH DURING THE YEARS 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1908 ...	25,507,414	18,662,070	6,946,550	6,689,376	1,592,216	* 1,560,000	60,957,626
1909 ...	27,314,486	19,706,530	7,658,195	6,004,459	1,529,211	* 1,816,000	64,028,881
1910 ...	31,379,604	21,941,255	9,476,819	6,639,255	1,809,959	1,456,369	72,759,261
1911 ...	33,670,951	25,029,525	8,788,335	7,503,979	2,059,346	1,952,240	79,004,376
1912 ...	37,122,441	27,002,302	11,078,954	8,199,110	2,586,195	2,286,618	88,275,620

* Estimated on basis of partial returns and subsequent years' figures.

5. Total Value of Output of Manufacturing Industries, 1912.—The value of the output of new goods manufactured and repairs effected in factories of various classes in each State during the year 1912 is shewn in the following table. The figures given represent not only the increased value due to the process of manufacture, but also include the value of the raw materials used. The difference between the value of the materials used and the total output (see paragraph 6 hereof) is the real value of production from manufactories:—

TOTAL VALUE OF OUTPUT OF COMMONWEALTH, 1912.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
I. Treating raw material, product of agricultural & pastoral pursuits, etc.	£ 4,643,811	£ 3,082,047	£ 1,621,730	£ 897,590	£ 202,559	£ 205,811	£ 10,653,548
II. Treating oils and fats, animal, vegetable, etc. ...	1,099,693	632,707	125,855	193,312	78,709	13,852	2,144,128
III. Processes in stone, clay, glass, etc. ...	1,807,287	1,063,019	122,712	307,797	162,383	44,515	3,507,713
IV. Working in wood ...	3,701,239	2,198,272	1,798,849	1,079,804	1,134,144	368,976	10,281,284
V. Metal works, machinery, etc. ...	15,372,532	6,396,723	2,603,864	4,337,468	1,265,802	1,469,926	31,446,315
VI. Connected with food and drink, etc. ...	18,787,001	15,100,540	9,238,896	3,525,374	1,412,000	969,403	49,033,214
VII. Clothing and textile fabrics, etc. ...	5,698,087	8,047,239	1,496,705	1,013,688	542,636	270,390	17,068,745
VIII. Books, paper, printing, and engraving... ..	2,545,941	2,625,367	764,202	469,505	406,387	175,811	6,987,213
IX. Musical instruments, etc.	154,504	43,759	...	4,800	...	...	203,063
X. Arms and explosives ...	17,085	215,516	...	1,361	...	...	233,962
XI. Vehicles and fittings, saddlery and harness, etc.	1,079,984	1,040,452	342,629	475,972	172,045	97,361	3,208,443
XII. Ship and boat building and repairing ...	700,023	59,667	27,703	40,711	7,242	15,571	850,917
XIII. Furniture, bedding, and upholstery ...	1,171,320	988,464	269,312	279,845	151,884	73,038	2,933,863
XIV. Drugs, chemicals, and by-products ...	1,008,795	1,069,246	25,379	387,232	185,730	1,224	2,677,606
XV. Surgical and other scientific instruments ...	25,424	21,375	8,013	2,010	2,845	...	59,667
XVI. Jewellery, timepieces, and platedware ...	286,317	382,168	28,414	58,463	34,125	10,634	800,121
XVII. Heat, light, and power ...	2,526,546	1,319,674	287,996	315,253	302,303	150,203	4,901,975
XVIII. Leatherware, n.e.i. ...	225,893	275,118	15,143	7,332	7,637	...	531,323
XIX. Minor wares, n.e.i. ...	311,546	849,420	21,502	40,701	23,637	5,201	1,252,307
Total	61,163,328	45,410,773	18,798,904	13,435,218	6,092,268	3,871,916	148,775,407

It may be seen that the State of New South Wales far outstrips the other States in the total value of the output of her factories, the value being £61,163,328, or 41.11 per cent. on the total for the Commonwealth. The next State in order of value is Victoria, which produced 30.52 per cent.; the value of the output of Queensland was 12.64 per cent.; of South Australia 9.03 per cent.; of Western Australia 4.10 per cent.; and of Tasmania 2.60 per cent. The four most important classes in order of value of output (Classes VI., V., VII. and I.) are the same as in order of value of raw materials used. The following statement shews the value of output of factories in each State during the five years ended 1912:—

TOTAL VALUE OF OUTPUT OF FACTORIES IN COMMONWEALTH DURING THE YEARS 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
1908 ...	40,163,326	30,787,760	11,182,009	10,471,671	4,056,365	*2,868,000	99,529,631
1909 ...	42,960,689	32,898,235	12,823,695	9,928,105	4,008,604	*3,339,000	105,958,328
1910 ...	49,615,643	36,660,854	15,792,109	11,184,695	4,533,611	3,073,246	120,860,158
1911 ...	54,346,011	41,747,863	15,675,662	12,416,381	5,311,086	3,525,087	133,922,030
1912 ...	61,163,328	45,410,773	18,798,904	13,438,218	6,092,268	3,871,916	148,775,407

PER HEAD OF MEAN POPULATION.

1908 ...	25.53	24.82	20.60	27.44	15.73	15.30	23.73
1909 ...	26.88	26.09	23.16	25.33	15.23	17.53	24.79
1910 ...	30.38	28.59	26.69	27.88	16.73	16.09	27.66
1911 ...	32.70	31.62	25.52	30.19	18.52	18.52	29.62
1912 ...	35.22	33.48	29.77	31.87	20.21	20.20	32.03

* See note (*) to last table § 6, 4.

6. **Value of Production of Manufacturing Industries, 1912.**—The difference between the figures given in paragraph 5 and the corresponding figures in paragraph 4 hereof represents the amount added to the value of the raw materials by the process of manufacture. This is the real measure of the value of production of manufacturing industries. The following table shews the value added in this manner in each State during the year 1912 for the various classes of factories:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN
COMMONWEALTH, 1912.**

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	Cwealth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	763,465	618,640	234,518	178,000	40,589	39,378	1,874,590
II. Treating oils and fats, animal, vegetable, etc.	315,792	204,478	48,820	71,815	21,502	5,383	667,790
III. Processes in stone, clay, glass, etc.	1,466,737	851,094	112,488	263,805	144,713	38,027	2,876,864
IV. Working in wood.	1,441,144	1,128,079	1,016,748	336,662	1,029,983	243,176	5,195,792
V. Metal works, machinery, etc.	6,693,956	3,359,786	1,210,782	1,725,863	553,125	468,944	14,012,456
VI. Connected with food and drink, etc.	4,196,868	3,616,410	3,079,441	946,665	590,898	272,347	12,702,629
VII. Clothing and textile fabrics, etc.	2,855,325	3,625,974	707,577	492,463	263,831	145,295	8,090,465
VIII. Books, paper, printing, and engraving	1,647,888	1,721,653	615,773	281,295	307,689	126,470	4,700,768
IX. Musical instruments, etc.	85,596	27,599	...	3,255	...	...	116,450
X. Arms and explosives	3,893	84,005	...	561	...	...	88,459
XI. Vehicles and fittings, saddlery and harness, etc.	646,735	622,872	212,159	264,825	100,574	52,318	1,899,483
XII. Ship and boat building and repairing	511,005	44,587	19,287	28,899	3,891	8,437	616,106
XIII. Furniture, bedding, and upholstery	604,161	478,467	153,996	170,394	77,924	45,243	1,530,125
XIV. Drugs, chemicals, and by-products	464,065	437,936	10,605	151,392	59,439	339	1,123,776
XV. Surgical and other scientific instruments	18,128	14,532	5,834	1,860	1,930	...	42,284
XVI. Jewellery, timepieces, and plated ware	155,396	194,757	13,949	33,791	13,601	6,758	418,192
XVII. Heat, light, and power	1,962,314	993,065	261,285	260,254	278,440	130,323	3,885,681
XVIII. Leatherware, n.e.i.	85,292	92,684	6,063	3,403	4,607	...	192,049
XIX. Minor wares, n.e.i.	123,187	291,853	10,625	23,966	13,337	2,860	465,828
Total ...	24,040,887	18,408,471	7,719,950	5,239,108	3,506,073	1,585,298	60,499,787

It may be seen that the amount of the value added in each State is in the same order as in the case of value of output. The value added to raw material by process of manufacture and amount per head of mean population is shewn in the following statement for the years 1908 to 1912:—

**VALUE OF PRODUCTION OF MANUFACTURING INDUSTRIES IN COMMONWEALTH,
1908 to 1912.**

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tas.	C'wealth.
VALUE.							
	£	£	£	£	£	£	£
1908 ...	14,656,412	12,125,690	4,235,459	3,782,295	2,464,149	*1,308,000	98,572,005
1909 ...	15,646,203	13,191,705	5,165,500	3,923,646	2,479,393	*1,523,000	41,929,447
1910 ...	18,236,039	14,719,599	6,315,290	4,489,440	2,723,652	1,616,877	48,100,897
1911 ...	20,675,060	16,718,338	6,887,327	4,912,402	3,251,740	1,572,847	54,017,714
1912 ...	24,040,887	18,408,471	7,719,950	5,239,108	3,506,073	1,585,298	60,499,787
PER HEAD OF MEAN POPULATION.							
1908 ...	9.32	9.77	7.80	10.01	9.56	6.98	9.20
1909 ...	9.79	10.46	9.33	10.01	9.42	8.01	9.81
1910 ...	11.17	11.48	10.68	11.19	10.05	8.47	11.01
1911 ...	12.44	12.66	11.21	11.95	11.34	8.26	12.03
1912 ...	13.84	13.57	12.22	12.43	11.63	8.27	13.03

* See note (*) to last table § 6, 4.

It may thus be seen that in 1912 the positions of the States, in regard to total value of output of factories per head of mean population, coincide in regard to value added per head, with the exception of Queensland and South Australia, whose positions are reversed.

As the total value of the output for the Commonwealth was estimated at £148,775,407, there remained, after payment of £88,275,620, the value of the raw materials used, of £31,287,492 for salaries and wages, and of £3,047,384 for fuel, the sum of £26,164,911 to provide for all other expenditure and profits. The following table gives corresponding particulars for each State, expressed absolutely and as percentages of the total value of the output:—

**VALUE OF OUTPUT AND COST OF PRODUCTION IN COMMONWEALTH
FACTORIES, 1912.**

State.	Raw Materials Used.	Fuel and Light.	Salaries and Wages.	All other Expenditure Interest, and Profits.	Total Value of Output.
VALUE AND COST, ETC.					
	£	£	£	£	£
New South Wales ...	37,122,441	1,360,141	11,592,052	11,088,694	61,163,328
Victoria ...	27,002,302	683,376	10,102,244	7,622,851	45,410,773
Queensland ...	11,078,954	261,978	3,699,065	3,758,907	18,798,904
South Australia ...	8,199,110	363,403	2,869,653	2,006,052	13,438,218
Western Australia ...	2,586,195	191,025	2,169,144	1,145,904	6,092,268
Tasmania ...	2,286,618	187,461	855,334	542,503	3,871,916
Commonwealth ...	88,275,620	3,047,384	31,287,492	26,164,911	148,775,407

PERCENTAGE OF COSTS, ETC., ON TOTAL VALUE.

	%	%	%	%	%
New South Wales ...	60.69	2.22	18.95	18.14	100.00
Victoria ...	59.46	1.50	22.25	16.79	100.00
Queensland ...	58.93	1.39	19.68	20.00	100.00
South Australia ...	61.01	2.70	21.35	14.94	100.00
Western Australia ...	42.45	3.14	35.60	18.81	100.00
Tasmania ...	59.06	4.84	22.09	14.01	100.00
Commonwealth ...	59.33	2.05	21.03	17.59	100.00

§ 7. Land, Buildings, Plant and Machinery.

1. General.—As an indication of the permanent character and stability of the industries which have been established in the Commonwealth, it may be noted that the values of land and buildings and of plant and machinery used in the factories are rapidly increasing. Thus, for the whole Commonwealth the total value of land and buildings and plant and machinery has increased from 1906 to 1912 by £22,245,562, i.e., from £46,824,489 to £69,270,051, or at the rate of £3,740,927 per annum.

The following statement shews for the year 1912 the values of land and buildings and of plant and machinery used in connection with manufacturing industries in each State:—

VALUE OF LAND, BUILDINGS, PLANT AND MACHINERY IN CONNECTION WITH MANUFACTURING INDUSTRIES, 1912.

Value of—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Land and buildings ...	14,765,810	10,362,661	3,524,991	3,150,834	1,910,372	1,094,468	34,809,156
Plant and machinery ...	13,795,195	9,095,134	5,442,471	2,725,540	2,241,536	1,161,019	34,460,895
Total ...	28,561,005	19,457,795	8,967,462	5,876,374	4,151,908	2,255,507	69,270,051

It may be seen from the above table that the total capital invested in land, buildings, plant, and machinery in manufacturing industries in the Commonwealth during the year 1912 was approximately £69,270,051 (or £14 12s. 8d. per head of population); of that sum £34,809,156 was invested in land and buildings occupied as manufactories, the remaining £34,460,895 being the value of the plant and machinery used in connection therewith.

2. Value of Land and Buildings.—The value of the land and buildings occupied in connection with manufacturing industries may be conveniently classified according to the nature of the industry conducted therein.

(i.) *Total Value in Commonwealth, 1908 to 1912.* The following table shews for the whole Commonwealth the approximate values of land and buildings occupied in connection with manufacturing industries of various classes during each year from 1908 to 1912 inclusive:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN COMMONWEALTH, 1908 to 1912.

Class of Industry.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	847,113	870,588	921,785	978,978	1,004,221
II. Treating oils & fats, animal, vegetable, etc. ...	359,624	376,681	394,079	445,498	449,453
III. Processes in stone, clay, glass, etc. ...	937,753	956,733	1,073,612	1,228,889	1,382,062
IV. Working in wood ...	1,195,581	1,285,267	1,492,873	1,668,045	1,923,963
V. Metal works, machinery, etc. ...	4,378,755	4,415,525	4,554,693	5,000,274	5,437,718
VI. Connected with food and drink, etc. ...	7,161,845	7,191,976	7,399,625	8,167,496	8,259,066
VII. Clothing and textile fabrics, etc. ...	3,377,905	3,808,148	4,191,488	4,601,924	4,928,474
VIII. Books, paper, printing, and engraving ...	2,483,693	2,642,029	2,779,754	2,964,466	3,150,049
IX. Musical instruments, etc. ...	31,054	33,314	75,632	82,168	85,731
X. Arms and explosives ...	34,586	33,016	38,763	41,462	112,300
XI. Vehicles & fittings, saddlery & harness, etc. ...	1,172,556	1,186,750	1,325,152	1,453,077	1,654,488
XII. Ship and boat building and repairing ...	988,141	1,033,513	1,052,868	1,163,290	1,261,647
XIII. Furniture, bedding, and upholstery ...	659,604	690,588	757,485	893,408	1,043,680
XIV. Drugs, chemicals, and by-products ...	531,765	543,507	687,162	760,441	823,429
XV. Surgical and other scientific instruments ...	33,054	56,378	56,149	61,703	59,308
XVI. Jewellery, timepieces, and platedware ...	226,332	232,483	271,834	300,717	344,306
XVII. Heat, light, and power ...	1,928,734	2,026,611	2,112,220	2,320,348	2,511,317
XVIII. Leatherware, n.e.i. ...	91,036	83,578	100,096	111,506	120,646
XIX. Minor wares, n.e.i. ...	218,840	210,325	220,984	250,550	257,208
Total ...	26,657,991	27,672,010	29,506,054	32,494,250	34,809,156

It may be seen from the above table that the total net increase during the four years was £8,144,480, or an annual average of £2,036,120. The largest increases were in Classes VII., VI., and V., and amounted to £1,550,569, £1,097,221, and £1,058,963 respectively.

(ii.) *Value in each State, 1912.* The following table gives similar information for each State up to the 31st December, 1912:—

VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1912.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
	£	£	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc.	394,917	400,418	58,731	107,001	26,980	16,174	1,004,221
II. Treating oils and fats, animal, vegetable, etc.	235,903	102,950	25,554	66,881	13,850	4,315	449,453
III. Processes in stone, clay, glass, etc.	760,788	397,011	50,889	107,253	43,861	522,260	1,382,062
IV. Working in wood	937,395	357,165	192,027	150,606	201,570	85,199	1,923,963
V. Metal works, machinery, etc.	2,460,350	1,299,909	566,198	532,551	486,553	92,157	5,437,718
VI. Connected with food and drink, etc.	2,644,498	2,459,897	1,404,610	745,183	430,184	574,694	8,259,066
VII. Clothing and textile fabrics, etc.	2,184,444	1,744,148	324,542	403,923	161,345	110,072	4,928,474
VIII. Books, paper, printing and engraving	1,280,913	897,453	429,712	297,914	198,095	45,962	3,150,049
IX. Musical instruments, etc.	59,276	23,355	...	3,100	...	...	85,731
X. Arms and explosives	67,485	41,315	...	3,500	...	...	112,300
XI. Vehicles and fittings, saddlery and harness, etc.	668,522	459,551	144,579	244,211	84,710	52,915	1,654,488
XII. Ship and boat building and repairing	712,842	475,120	9,155	59,810	2,120	2,600	1,261,647
XIII. Furniture, bedding and upholstery	447,420	330,634	97,514	90,208	46,689	31,215	1,043,680
XIV. Drugs, chemicals, and by-products	279,635	312,015	10,500	138,654	81,625	1,000	823,429
XV. Surgical and other scientific instruments	27,568	15,540	11,910	2,400	1,890	...	59,308
XVI. Jewellery, timepieces, and platedware	151,274	120,356	17,806	39,620	6,500	8,750	344,306
XVII. Heat, light, and power	1,289,812	778,445	162,208	132,997	103,830	44,025	2,511,317
XVIII. Leatherware, n.e.i.	50,213	51,723	9,000	4,160	5,550	...	120,646
XIX. Minor wares, n.e.i.	112,555	95,655	10,056	20,862	15,020	3,150	257,298
Total	14,765,810	10,362,661	3,524,991	3,150,834	1,910,372	1,094,488	34,809,156

The maximum value for the Commonwealth of land and buildings in any particular class was in Class VI., amounting to £8,259,066, or 23.73 per cent. on the total value. The next classes in importance were Classes V., VII., VIII., and XVII., in which the values were £5,437,718, £4,928,474, £3,150,049, and £2,511,317 respectively. The sum of the values for the five classes mentioned amounted to £24,286,624, or 69.77 per cent. on the total value for all classes.

(iii.) *Total Value in each State, 1908 to 1912.* The following table shews the total value of land and buildings occupied as manufactories in each State at the end of each year from 1908 to 1912 inclusive:—

TOTAL VALUE OF LAND AND BUILDINGS OCCUPIED AS FACTORIES IN EACH STATE, 1908 to 1912.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908...	10,390,260	8,589,027	2,763,085	2,304,965	1,565,756	1,044,898	26,657,991
1909...	11,014,362	8,642,344	2,888,923	2,425,970	1,522,692	1,177,719	27,672,010
1910...	12,108,776	9,012,263	3,045,974	2,641,973	1,674,953	1,022,115	29,506,054
1911...	13,474,455	9,921,520	3,277,776	2,950,170	1,819,342	1,050,987	32,494,250
1912...	14,765,810	10,362,661	3,524,991	3,150,834	1,910,372	1,094,488	34,809,156

It may be seen that since 1908 there has been a general, though in two States an irregular increase; the temporary fall in Western Australia was probably due to the

general reduction in values of real estate in that State during the past few years. The fall in Tasmania for 1910 was due to the closing down of a large pyrites works.

3. Value of Plant and Machinery.—The following table shews for the whole Commonwealth the approximate value of plant and machinery used in connection with factories at the end of each year from 1908 to 1912 inclusive:—

**VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN COMMONWEALTH,
1908 to 1912.**

Class of Industry.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	671,015	754,556	829,255	877,820	926,966
II. Treating oils & fats, animal, vegetable, etc. ...	349,997	349,479	360,660	435,315	417,231
III. Processes in stone, clay, glass, etc. ...	833,809	901,193	1,109,139	1,299,774	1,491,383
IV. Working in wood... ..	1,583,496	1,623,497	1,852,296	2,207,703	2,455,436
V. Metal works, machinery, etc. ...	4,633,656	4,941,632	5,255,575	5,722,956	6,308,356
VI. Connected with food and drink, etc. ...	7,744,682	7,772,770	8,212,440	8,570,565	9,029,735
VII. Clothing and textile fabrics, etc. ...	1,158,698	1,280,102	1,403,135	1,538,062	1,620,437
VIII. Books, paper, printing, and engraving ...	2,091,168	2,207,930	2,362,268	2,481,399	2,628,039
IX. Musical instruments, etc. ...	9,124	11,263	16,443	17,924	20,960
X. Arms and explosives	46,113	45,940	47,012	56,255	158,823
XI. Vehicles & fittings, saddlery & harness, etc. ...	204,138	220,746	249,973	283,470	329,933
XII. Ship and boat building, and repairing ...	432,803	434,905	443,429	478,012	597,783
XIII. Furniture, bedding, and upholstery ...	117,481	126,000	150,774	177,924	207,211
XIV. Drugs, chemicals, and by-products ...	398,028	435,019	517,781	602,276	629,402
XV. Surgical and other scientific instruments ...	8,144	9,215	9,929	11,158	11,615
XVI. Jewellery, timepieces, and plated ware ...	46,160	43,980	49,490	61,765	61,791
XVII. Heat, light, and power	5,481,759	5,561,333	5,961,816	6,611,770	7,392,958
XVIII. Leatherware, n.e.i.	18,989	19,555	24,651	25,565	27,695
XIX. Minor wares, n.e.i.	96,503	116,097	120,669	138,896	145,141
Total	25,927,763	26,855,212	28,976,735	31,599,209	34,460,895

It may be seen that during the period in question there has been a steady and substantial net increase amounting in all to £8,533,132, or an annual average of £2,133,283. The increase has occurred in all classes of industry, the largest increase being in Class XVII., "Heat, Light, and Power," amounting to £1,911,199, while the two next largest were in Class V., "Metal Works, Machinery, etc.," amounting to £1,674,700, and and Class VI., "Connected with Food and Drink, etc.," with an increase of £1,285,053.

(i.) *Total Value in each State, 1908 to 1912.* The classified figures in the preceding table for the whole Commonwealth are shewn below for each State. It will be seen that the progress in value referred to is general throughout the States. New South Wales shews by far the largest increase, viz., £4,076,353; while Victoria comes next with £2,137,528.

VALUE OF PLANT AND MACHINERY IN FACTORIES, 1908 to 1912.

Year.	N.S.W.	Victoria.	Queensland.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908	9,718,842	6,957,606	4,470,145	2,064,097	1,744,652	972,421	25,927,763
1909	10,330,724	7,140,304	4,457,314	2,135,203	1,728,207	1,063,460	26,855,212
1910	11,578,620	7,601,085	4,631,519	2,225,718	1,893,602	1,046,191	28,976,735
1911	12,510,600	8,336,373	4,947,259	2,506,000	2,082,777	1,216,200	31,599,209
1912	13,795,195	9,095,134	5,442,471	2,725,540	2,241,536	1,161,019	34,460,895

(ii.) *Classified Value in each State, 1912.* The following table shews the value of plant and machinery used in factories in each State during the year 1912, classified according to the nature of the industry in which used:—

VALUE OF PLANT AND MACHINERY USED IN FACTORIES IN EACH STATE, 1912.

Class of Industry.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Cwealth.
I. Treating raw material, product of agricultural and pastoral pursuits, etc. ...	£ 374,577	£ 292,812	£ 128,866	£ 70,567	£ 21,525	£ 38,619	£ 926,966
II. Treating oils and fats, animal, vegetable, etc. ...	212,958	128,600	39,729	25,044	9,675	1,225	417,231
III. Processes in stone, clay, glass, etc. ...	902,759	356,914	70,978	108,493	43,665	13,574	1,491,383
IV. Working in wood ...	799,652	440,216	178,353	73,407	504,317	159,491	2,455,436
V. Metal wks., machinery, etc. ...	3,098,426	1,287,628	698,588	498,185	360,829	364,700	6,308,356
VI. Connected with food and drink, etc. ...	2,962,061	1,993,895	2,989,082	550,316	390,511	143,870	9,029,735
VII. Clothing and textile factories, etc. ...	500,297	813,123	132,500	86,196	36,386	51,935	1,620,437
VIII. Books, paper, printing, and engraving ...	1,045,208	865,312	265,444	212,604	171,231	68,240	2,628,039
IX. Musical instruments, etc. ...	13,779	6,451	...	730	...	...	20,960
X. Arms and explosives ...	90,717	67,706	...	400	...	...	158,823
XI. Vehicles and fittings, saddlery and harness, etc. ...	111,620	103,847	36,306	46,323	20,677	11,160	329,933
XII. Ship and boat building and repairing ...	496,131	71,524	11,418	13,760	545	4,405	597,783
XIII. Furniture, bedding, and upholstery ...	61,749	63,051	29,041	33,838	13,195	6,337	207,211
XIV. Drugs, chemicals, and by-products ...	218,198	179,606	4,600	125,079	101,416	500	629,402
XV. Surgical and other scientific instruments ...	4,522	3,701	1,567	950	875	...	11,615
XVI. Jewellery, timepieces, and platedware ...	25,737	24,949	3,572	4,885	1,223	1,425	61,791
XVII. Heat, light, and power ...	2,802,203	2,305,774	549,332	877,041	562,819	295,189	7,392,958
XVIII. Leatherware, n.e.i. ...	11,440	13,812	1,354	339	750	...	27,695
XIX. Minor wares, n.e.i. ...	63,161	76,210	1,141	2,383	1,897	349	145,141
Total ...	13,795,195	9,095,134	5,442,471	2,725,540	2,241,536	1,161,019	34,460,895

The greatest value for any particular class of industry is for Class VI., "Connected with Food and Drink, etc.," and amounts to £9,029,735, or 26.20 per cent. on the total for all classes. The next in order of importance is Class XVII., "Heat, Light, and Power," which amounts to £7,392,958, or 21.45 per cent. on the total; followed by Class V., "Metal Works, Machinery, etc.," amounting to £6,308,356, or 18.31 per cent. on the total value. The total for the three classes just specified amounts to £22,731,049, or 65.96 per cent. on the total value for all classes.

§ 8. Individual Industries.

1. **General.**—The preceding remarks and tables furnish a general view of the recent development of particular classes of industries in Australia treated under the nineteen categories referred to in § 1, 3 hereof. In order to make the information complete, it must necessarily be supplemented by details exhibiting the development of individual industries. This alone will furnish adequate information as to the channels into which the main efforts of Australian manufacture flow. While it is not possible, within the limits of this article, to give anything like a detailed account of the manufacturing industries of the Commonwealth, it is proposed to deal herein with such particular industries as are of special importance by reason of the number of persons employed, the number of factories, the amount of capital invested therein, the value of the production, or other features of special interest. In cases where there are only one or two establishments of a particular class in any State, returns relative to output are not published, in order to avoid disclosing information as to the operations of individual factories.

2. **Tanning Industry.**—In Class I. (see § 1. 3 hereof) the most important industry is tanning. Until recent years the production of tanneries in Australia was confined to the coarser class of leathers, but lately the tanning of the finer skins has been undertaken with satisfactory results. The position of the industry in the several States in 1912 was as follows:—

TANNERIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	77	55	22	13	3	4	174
employees	983	1,548	211	199	57	73	3,071
Actual horse-power of engines employed ...	1,059	1,471	348	232	83	81	3,274
Approx. value of lands and buildings £	124,725	174,735	18,660	24,994	14,640	9,144	366,898
Approx. value of plant and machinery £	83,179	118,649	18,490	11,601	8,950	9,636	250,495
Total amount of wages paid during year £	98,134	168,567	22,177	24,038	6,380	8,764	328,060
Value of fuel used	6,466	10,935	1,136	1,613	472	719	21,341
Value of raw material worked up ...	£ 799,695	1,059,941	159,408	118,476	35,634	43,551	2,216,705
Total value of output	£ 992,474	1,371,741	208,062	158,023	44,956	58,751	2,834,007
Value added in process of manufacture £	192,779	311,800	48,654	39,547	9,322	15,200	617,802

(i.) *Progress of Tanning, etc. Industries, 1908 to 1912.* The development of the tanning, fellmongering, and wool-scouring industries during the period 1908 to 1912 is shewn in the following table, from which it will be seen that though the numbers of factories and employees are almost stationary, the value of plant and machinery shews a satisfactory increase, amounting to no less than 43.74 per cent. during the period under consideration.

DEVELOPMENT OF TANNING, FELLMONGERING, Etc., INDUSTRIES, 1908 to 1912.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
N. S. Wales ...	146	147	140	135	136	2,396	2,544	2,640	2,642	2,550	167,071	188,820	245,082	242,441	263,407
Victoria ...	92	93	89	88	90	2,001	1,999	1,956	2,123	1,996	133,376	142,429	141,702	165,964	176,947
Queensland ...	39	36	40	37	44	685	667	769	659	676	91,492	88,337	96,811	109,193	121,559
S. Australia ...	14	15	17	17	17	341	288	286	274	263	11,991	14,161	13,986	14,677	13,970
West. Australia ...	3	4	4	4	3	69	69	67	68	57	5,640	5,506	6,070	8,850	8,950
Tasmania ...	9	8	8	7	4	78	68	66	71	73	7,476	7,600	7,150	8,331	9,636
Commonwealth	303	303	298	288	294	5,570	5,635	5,784	5,837	5,615	417,046	446,855	510,801	549,456	599,465

(ii.) *Production of Tanneries, 1912.* The quantity of raw materials used and the quantity and value of leather produced in tanneries in each State during the year 1912 are shewn in the following table:—

RAW MATERIALS USED AND LEATHER PRODUCED IN TANNERIES, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
RAW MATERIALS USED.							
Hides&skins No. (,000 omitted)	626	986	167	99	25	28	1,931
Pelts treated No. ...	4,309	636	187	20	...	29	5,181
Bark Tons	10,470	11,363	2,445	1,455	590	486	26,739
LEATHER AND BASILS PRODUCED.							
LEATHER—							
Quantity lbs. (,000 omitted)	13,449	16,469	*173	2,218	823	913	†
Value £	806,513	1,317,000	193,535	155,515	44,956	45,990	2,563,509
BASILS—							
Quantity lbs. (,000 omitted)	4,030	645	†177	20	...	13	†
Value £	149,174	23,850	7,465	1,640	...	825	182,954

* No. of sides of sole and belting. There were also 21,055 hides of calf leather produced.
† Number. † Not available.

3. Soap and Candle Factories.—In Class II. (see § 1. 3 hereof) the manufactures of soap and candles are the most important industries. These two manufactures are frequently carried on in the same establishments, so that separate returns cannot be obtained; it may, however, be said generally that the manufacture of soap is the more important of the two. The following table gives particulars of soap and candle factories in each State during the year 1912:—

SOAP AND CANDLE FACTORIES, 1912.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Cwlth.
Number of factories	34	17	15	5	4	2	77
employees	689	598	166	226	69	28	1,776
Actual horse-power of engines employed ...	550	391	133	131	66	3	1,274
Approximate value of land and buildings £	173,577	89,025	25,554	54,301	13,850	4,265	360,572
" " plant and machinery £	160,472	117,034	39,729	20,580	9,675	875	348,365
Total amount of wages paid during year £	52,880	61,398	15,218	22,660	7,888	2,507	162,551
Value of fuel used	11,151	9,934	1,968	6,873	*	*	30,896
Value of raw material worked up ...	394,216	375,213	77,035	118,780	*	*	1,030,770
Total value of output	648,311	562,013	125,855	187,408	*	*	1,614,896
Value added in process of manufacture £	254,095	186,800	48,820	68,628	*	*	584,128

* To avoid disclosing output, etc., of any one establishment, details for these States are not given.

(i.) *Development of Soap and Candle Factories, 1908 to 1912.* The following table gives particulars for the last five years regarding the number of factories and employees and the value of plant and machinery in these industries in each State:—

DEVELOPMENT OF SOAP AND CANDLE FACTORIES, 1908 to 1912.

State.	Number of Factories.					Average Number of Employees.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
N.S.W.	29	26	33	37	34	553	571	624	658	689	£	£	£	£	£
Vic. ...	17	17	16	16	17	535	563	540	538	598	135,786	127,437	132,004	150,453	160,472
Q'land...	16	18	17	18	15	159	174	168	175	166	109,768	111,252	113,418	113,664	117,034
S. Aus...	6	7	6	6	5	164	185	192	221	226	35,794	40,102	39,202	40,209	39,729
W. Aus.	3	3	4	2	4	50	50	50	46	69	12,484	14,324	13,128	14,262	20,580
Tas. ...	2	2	2	2	2	35	39	32	30	28	4,910	3,200	6,725	6,600	9,675
											4,000	3,800	1,216	1,085	875
C'wlth...	73	73	78	81	77	1,496	1,582	1,606	1,668	1,776	302,742	300,015	305,693	326,273	348,365

(ii.) *Production of Soap and Candles, 1908 to 1912.* The subjoined statement shews that, taking the Commonwealth as a whole, there has been a considerable and consistent increase in the output of soap during the past four years. The quantity of candles produced during 1911 and 1912, shews a falling off as compared with the two previous years, but a slight increase over the output of 1908.

PRODUCTION OF SOAP AND CANDLES, 1908 to 1912.

State.	Soap.					Candles.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W.	217,321	206,678	245,538	269,019	281,546	5,566,776	6,922,468	6,669,875	5,388,848	5,561,858
Vic. ...	162,757	176,162	187,433	189,048	215,629	4,222,960	5,091,520	5,014,016	4,654,384	4,497,584
Q'land...	67,755	73,446	74,338	71,936	76,689	1,028,160	557,312	585,040	1,188,880	1,160,880
S. Aus...	61,614	66,043	66,800	70,080	71,127	1,806,725	1,678,900	1,788,224	1,771,175	1,858,180
W. Aus.	29,767	35,419	34,707	*	38,331	1,259,214	1,309,066	1,225,356	*	*
Tas. ...	10,500	9,900	8,642	*	5,400	448,000	537,600	495,040	*	*
C'wlth...	549,714	567,648	617,458	639,458	688,722	14,331,835	16,096,886	16,197,551	14,573,662	14,647,939

* Figures not available for publication.

(iii.) *Raw Materials Used, 1912.* The following statement shews the quantity of certain raw materials used in soap and candle factories in each State during the year 1912 :—

RAW MATERIALS USED IN SOAP AND CANDLE FACTORIES, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Tallow ... cwt.	128,285	146,679	33,679	48,156	*	*	411,701
Alkali ... "	61,384	40,055	24,970	7,409	*	*	135,643
Cocoonut oil ... gal.	323,692	138,965	376	24,836	*	*	489,329

* Figures not available for publication.

In addition to the above, there were 247 cwt. of copra used in the States of Western Australia and Tasmania.

4. *Saw Mills, etc.*—The most important industry in Class IV. is that of saw-milling. As separate particulars of forest saw mills are not available for some of the States, both forest and other saw mills as well as joinery, moulding and box factories have been combined in the following table.

SAW MILLS, FOREST AND OTHER, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	638	357	312	88	68	146	1,609
" employees ...	8,436	6,691	5,586	1,760	4,861	2,024	29,358
Actual horse-power of engines employed	15,704	8,561	7,780	1,469	4,151	2,601	40,266
Approx. value of land and buildings	£ 849,510	303,768	179,307	142,091	198,388	80,885	1,754,241
" plant and machinery	£ 741,374	417,951	474,203	70,336	503,367	158,231	2,365,462
Total amount of wages paid during year	£ 840,514	686,672	527,048	196,136	791,735	169,520	3,211,625
Value of fuel used	£ 17,885	10,709	7,989	3,411	1,847	2,072	43,913
Value of raw material worked up	£ 2,171,829	1,011,467	763,458	727,834	101,345	124,676	4,900,612
Total value of output	£ 3,513,134	2,061,974	1,764,598	1,050,571	1,126,435	366,698	9,882,510
Value added in process of manufacture	£ 1,341,305	1,050,507	1,001,140	322,737	1,025,087	241,322	4,982,198

5. *Agricultural Implement Factories.*—The manufacture of agricultural implements is an important industry in Australia, and is of particular interest owing to the fact that it is one of the first industries to which what has been called the "New Protection" system was sought to be applied (see Section XXVII. hereof). The nature of the machines manufactured may be gathered from the machines scheduled in the Customs tariff, 1906-7, which includes stripper harvesters, strippers, stump-jump ploughs, disc cultivators, winnowers, corn-shellers and baggers, drills, and other implements usually employed in agriculture. The stripper-harvester, which combines the stripper with a mechanism for winnowing and bagging grain, is an Australian invention, and is exported to many countries.

The following table gives particulars of the agricultural implement works of Australia for the year 1912 :—

AGRICULTURAL IMPLEMENT WORKS, 1912.

Items.	N.S.W.	Victoria	Q'land.	S.Aust.	W.A.	Tas.	C'w'lth.
Number of factories ...	22	67	4	57	7	2	159
" employees ...	613	2,665	113	1,229	99	14	4,733
Actual horse-power of engines employed	190	1,014	48	1,071	86	10	2,419
Approx. value of land and buildings	£ 77,849	163,528	4,884	72,397	11,940	750	331,348
" plant and machinery	£ 24,822	161,294	5,782	79,307	10,093	625	281,923
Total amount of wages paid during year	£ 68,477	309,780	10,051	124,705	13,759	625	527,406
Value of fuel used	£ 2,025	19,388	*	7,932	881	*	30,961
Value of raw material worked up	£ 249,161	329,397	*	112,678	46,480	*	751,596
Total value of output	£ 347,421	709,217	*	297,105	65,349	*	1,538,421
Value added in process of manufacture	£ 98,260	469,820	*	184,427	18,860	*	786,825

* To avoid disclosing output, etc., of any one establishment, details for these States are not given.

Development of Agricultural Implement Works. The following table shews the progress of this industry during the years 1908 to 1912 to have been very satisfactory. During the four years the number of establishments increased $13\frac{1}{2}$ per cent., the number of employees 51 per cent., and the value of plant and machinery 107 per cent. :—

AGRICULTURAL IMPLEMENT WORKS, 1908 to 1912.

State.	Number of Factories.					Number of Employees.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
											£	£	£	£	£
N.S.W.	20	21	21	20	22	434	481	600	615	613	16,008	18,063	18,575	18,360	24,822
Vic.	52	52	50	59	67	1,441	1,892	2,255	2,717	2,665	69,335	84,067	105,429	140,133	161,294
Q'land	2	4	4	3	4	108	284	364	89	113	8,244	12,121	14,283	3,672	5,782
S. Aus.	54	59	60	63	57	1,092	1,346	1,544	1,616	1,229	38,157	49,405	62,315	73,294	79,307
W. Aus.	3	5	6	7	7	25	49	73	97	99	4,259	5,277	6,663	8,951	10,093
Tas.	9	7	9	3	2	34	29	32	22	14	235	845	920	615	625
C'wlth.	140	148	150	155	159	3,184	4,081	4,868	5,156	4,733	136,238	169,778	208,185	245,025	281,923

6. **Engineering, Ironworks, and Foundries.**—The classification in these industries is not very satisfactory. Generally, engineering shops, ironworks, and foundries are included, as also are factories for making nails, safes, patterns, meters, and springs. Railway workshops, agricultural implement factories, cyanide, smelting, pyrites, and metallurgical works, galvanised iron, stoves and ovens, and wire working establishments are not included. The combination of industries is rendered necessary by the limited classification still adopted by some of the States.

ENGINEERING, IRONWORKS, AND FOUNDRIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	283	359	99	58	54	24	877
employees	9,411	9,171	2,983	1,911	1,175	500	25,151
Actual horse-power of engines employed	8,093	6,489	1,628	1,348	842	344	18,744
Approx. value of land and buildings	£ 862,423	534,102	166,633	93,080	98,301	37,630	1,792,169
plant and machinery	£ 831,769	687,870	183,651	110,048	91,754	48,386	1,953,478
Total amount of wages paid during year	£ 1,068,480	1,040,088	319,392	222,063	150,073	46,134	2,846,180
Value of fuel used	£ 57,898	87,390	16,855	17,077	12,974	3,535	195,729
Value of raw materials worked up	£ 1,490,602	1,246,137	354,172	227,035	186,041	32,192	3,536,179
Total value of output	£ 3,142,322	2,822,972	923,665	539,310	405,682	96,109	7,930,060
Value added in process of manufacture	£ 1,651,720	1,576,835	569,493	312,275	219,641	63,917	4,393,881

In addition to engineering works which supply local domestic requirements, there are now a number of large and important establishments which engage in the manufacture of special classes of machinery and implements. The manufacture of mining and smelting machinery and apparatus forms an important section of this industry, and many Australian mines have been locally equipped.

7. **Railway Carriages and Rolling Stock, Railway and Tramway Workshops.**—The railway workshops of Australia form an important item in the metal and machinery class, and are chiefly State institutions. The following table gives the details concerning them, but includes also private establishments manufacturing rolling stock :—

RAILWAY CARRIAGES AND ROLLING STOCK, RAILWAY AND TRAMWAY WORKSHOPS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
Number of factories	26	15	9	8	8	7	73
employees	8,552	4,631	2,009	2,197	1,897	286	19,662
Actual h.p. of engines employed	4,345	1,229	1,467	511	1,954	181	9,637
Approx. value of land and buildings	£ 889,679	316,936	294,846	256,690	373,062	7,060	2,128,273
Approx. value of plant and machinery	£ 637,718	232,610	187,906	169,019	257,957	78,410	1,563,710
Total amt. of wages paid during year	£ 1,173,512	626,258	285,109	297,500	282,241	38,001	2,702,711
Value of fuel used	£ 26,322	19,904	7,279	5,473	15,478	1,020	75,476
Value of raw material worked up	£ 2,142,526	1,653,116	495,800	552,375	786,713	64,691	5,695,221
Total value of output	£ 795,371	876,576	207,740	195,354	477,382	22,274	2,574,737
Value added in process of manufacture	£ 1,347,155	776,540	283,020	357,021	309,331	42,417	3,120,484

In addition to the above, a railway workshop was in operation in the Northern Territory during 1912. The work is almost exclusively repairs to stock, etc., no new

goods being manufactured. For the sake of convenience this establishment is not included in any of the tables in this publication. Nine hands were employed during the year, wages and salaries £1460. The cost of materials used was £872, and of fuel £76, and the value of output was £3317, and of land and buildings £14,684.

8. Smelting Works, etc.—The subjoined table gives particulars of metal smelting, cyanide, pyrites, and metallurgical works. The classification of these works does not appear to be carried out on a uniform basis in the several States, and the combination of industries is, therefore, somewhat unsatisfactory. The returns do not include particulars of plants used on mines.

SMELTING, CYANIDE, PYRITES, Etc., WORKS, 1912.

Items.	N. S. W.	Vic.	Q'land.	S. A.	W. A.	Tas.	C'w'lth.
Number of factories	35	86	13	6	...	4	144
" employees	3,708	687	891	1,605	...	1,150	8,041
Actual horse-power of engines employed	14,081	405	1,659	3,832	...	3,910	23,917
Approx. value of land and buildings £	265,269	12,462	20,226	19,748	...	38,877	356,582
" " plant and machinery £	1,401,428	55,877	262,731	68,420	...	233,799	2,022,255
Total am't of wages paid during year £	667,380	56,178	116,285	267,189	...	158,926	1,265,958
Value of fuel used	£ 434,889	5,896	19,097	135,230	...	104,601	699,715
Value of raw material worked up	£ 5,392,155	99,050	599,706	1,782,588	...	932,797	8,806,296
Total value of output	£ 8,400,025	218,956	717,931	2,481,701	...	1,278,457	13,097,070
Value added in process of manufacture £	3,007,870	119,906	118,225	699,113	...	345,660	4,290,774

* See third paragraph below.

In New South Wales and Queensland the above figures represent smelting works; those for Victoria include seventy-eight cyanide works, two metallurgical, four pyrites, and two smelting works; South Australia four cyanide and two smelting; and Tasmania three smelting and one cyanide works.

The largest output for the year under review was in New South Wales, viz., £8,400,025, or 64.14 per cent. on the total output for the Commonwealth. South Australia came next with £2,481,701, or 18.95 per cent.; this amount is made up of £2,474,863 smelting and £6838 cyanide. Of the total for Tasmania the output of smelting was £1,187,815, the balance £90,642 representing that obtained from cyanide works. The output in Victoria was £109,151, £12,422, £66,470, and £30,913 from cyanide, metallurgical, pyrites, and smelting works in the order named.

In Western Australia all the plants are worked on the mines and are therefore not included.

9. Bacon-curing Factories.—The following table gives particulars of factories engaged in bacon-curing in each State during the year 1912 :—

BACON-CURING FACTORIES, 1912.

Items.	N. S. W.	Vic.	Q'land.	S. A.	W. A.	Tas.	C'w'lth.
Number of factories	21	99	7	12	3	6	78
" employees	196	434	288	71	18	33	1,040
Actual horse-power of engines employed	332	513	287	58	46	50	1,285
Approx. value of land and buildings £	72,782	74,812	51,582	11,293	6,188	6,294	222,951
" " plant and machinery £	27,175	42,398	29,107	4,625	1,070	2,750	107,125
Total amount of salaries and wages paid £	28,738	45,794	29,220	7,245	3,270	3,072	117,339
Value of fuel used	£ 3,958	4,965	3,527	713	320	619	14,102
Value of raw material worked up	£ 382,780	533,483	236,000	78,772	99,550	24,816	1,355,401
Total value of output	£ 456,486	634,366	380,434	93,671	109,110	33,880	1,707,947
Value added in process of manufacture £	73,706	100,883	144,434	14,899	9,560	9,064	352,546

Further information regarding the bacon-curing industry may be found in Section IX., *Farmyard and Dairy Production*.

Quantity and Value of Production, 1912. The following table shews the number of pigs killed and the quantity and value of the production of bacon-curing factories in each State during the year 1912 :—

PRODUCTION OF BACON-CURING FACTORIES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tasmania.	C'wealth.
QUANTITY (,000 omitted).							
Bacon & ham lbs.	13,766	16,044	11,411	2,572	...	799	44,692
Lard ... lbs.	599	795	822	93	...	77	2,386
VALUE.							
Bacon & ham £	401,736	598,366	344,434	88,651	...	26,140	1,459,327
Lard ... £	15,889	21,000	21,500	2,333	...	1,328	62,050
Other products £	18,741	15,000	14,500	2,687	...	6,412	57,340
PIGS KILLED.							
Number ...	159,927	179,717	146,465	30,515	...	10,296	526,920

* In Western Australia all bacon and hams treated in factories are imported and subsequently smoked in that State.

10. **Butter, Cheese, and Condensed Milk Factories.**—The subjoined table gives particulars of butter, cheese, and condensed milk factories in each State during the year 1912. The returns are exclusive of butterine and margarine factories.

BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	176	197	81	48	3	25	530
employees ...	1,046	1,418	722	207	9	116	3,518
Actual horse-power of engines employed	2,367	2,824	1,297	366	27	212	7,093
Approximate value of land and buildings £	201,926	305,215	92,590	39,716	2,467	17,759	659,673
" " plant & machinery £	254,333	330,143	153,541	27,701	3,300	19,904	788,922
Total amount of wages paid ...	£ 129,449	152,922	77,201	15,504	1,297	9,420	385,793
Value of fuel used ...	£ 27,297	26,551	11,994	2,960	126	1,187	70,155
Value of raw material worked up	£ 3,698,946	3,257,213	1,286,000	276,545	8,144	149,498	8,676,346
Total value of output ...	£ 3,955,926	3,636,174	1,660,679	316,647	9,950	180,829	9,760,205
Value added in process of manufacture £	256,980	378,961	374,679	40,102	1,806	31,331	1,083,859

(i.) *Development of Factories, 1908 to 1912.* The following table shews the progress of the factories in this industry during the past five years:—

DEVELOPMENT OF BUTTER, Etc., FACTORIES, 1908 to 1912.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
N.S.W.	183	181	181	180	176	979	1,014	1,046	1,081	1,046	£ 247,678	£ 229,940	£ 231,679	£ 243,580	£ 254,333
Vict. ...	215	211	203	199	197	1,294	1,190	1,261	1,547	1,418	282,012	281,630	280,103	321,496	330,143
Q'land	82	80	82	83	81	1,238	760	814	752	722	145,531	138,049	147,396	158,772	153,541
S. Aust.	54	53	53	46	48	212	216	232	208	207	27,539	29,353	28,620	27,272	27,701
W. Aust.	2	3	3	3	3	6	10	8	10	9	2,300	4,117	4,070	3,725	3,300
Tas. ...	24	22	26	29	25	95	93	118	132	116	11,618	11,040	16,371	20,947	19,904
C'w'lth.	560	550	548	540	530	3,824	3,283	3,479	3,730	3,518	716,678	694,129	708,239	775,792	788,922

(ii.) *Quantity and Value of Production, 1912.* The following table shews the quantity and value of butter, cheese, and condensed milk produced, and the quantity of milk used in butter, cheese, and condensed milk factories in each State during 1912:—

PRODUCTION OF BUTTER, CHEESE, AND CONDENSED MILK FACTORIES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Butter ... lbs	72,433	62,227	28,185	4,809	121	3,278	171,053
Cheese ... "	3,463	2,172	3,533	1,955	...	523	11,946
Condensed and concentrated milk ... lbs.	3,637	18,456	7,923	...	...	...	30,016
VALUE (,000 OMITTED).							
Butter ... £	3,695	3,200	1,378	258	6	166	8,703
Cheese ... £	110	65	116	58	...	15	364
Condensed and concentrated milk ... £	50	362	167	...	...	...	579
MILK USED (,000 OMITTED).							
Butter factories ... gals.	170,009	142,014	62,821	9,919	284	7,640	392,687
Cheese " "	3,656	2,190	4,031	1,962	...	531	12,370
Condensed milk factories ... "	1,056	5,876	2,137	...	...	...	9,069

The butter, cheese and condensed milk industries are dealt with more fully in Section IX., *Farmyard and Dairy Production*.

11. Meat and Fish Preserving, Ice and Refrigerating Works.—These industries are now of considerable importance in Australia. The freezing of various kinds of produce for export has long been an established industry. Large freezing works have been installed at many ports in the Commonwealth for the purpose of freezing produce chiefly for export, and insulated space for the carriage of frozen produce is provided by a number of steamship companies trading between Australia and other parts of the world. Particulars regarding the export of frozen beef and mutton may be found on pages 284 and 288 hereof respectively. Special terms have been made by the Commonwealth Government in its English mail contract for the provision by the contractors of ample cold-storage facilities. The export of frozen produce is stated to be capable of considerable expansion. The particulars given in the subjoined table include ice-making and freezing works, and also meat-canning factories, separate particulars for each item for all the States not being available.

MEAT AND FISH-PRESERVING, ICE AND REFRIGERATING WORKS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	90	31	47	16	11	6	201
" employees ...	1,783	1,226	3,489	281	101	25	6,905
Actual horse-power of engines employed	4,370	4,044	5,867	755	736	140	15,912
Approx. value of land and buildings £	452,659	339,156	490,335	142,683	55,740	6,100	1,486,673
" plant and machinery £	463,751	196,124	409,194	82,871	42,713	3,000	1,198,553
Total amount of wages paid during year £	191,540	125,047	373,950	34,744	10,473	1,999	737,753
Value of fuel used ...	£ 37,570	25,065	50,559	5,621	4,680	372	123,867
Value of raw material worked up	£3,090,247	946,128	2,461,333	106,772	1,561	2,478	6,608,719
Total value of output ...	£3,626,863	1,173,988	3,356,602	157,983	30,439	5,375	8,351,250
Value added in process of manufacture £	536,616	227,860	895,069	51,211	28,878	2,897	1,742,531

The following table gives particulars, so far as available, of various classes of meat preserved during the year 1912 :—

MEAT-PRESERVING WORKS—PARTICULARS OF ANIMALS TREATED, 1912.

Particulars.			N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
Sheep treated	...	No.	616,435	1,409,243	613,681	5,561	...	...	2,644,920
Cattle	"	No.	50,941	10,793	335,014	1,495	...	...	398,243
Pigs	"	No.	...	3,120	...	...	...	...	3,120

Large quantities of rabbits, hares, and poultry were treated in freezing works, for which, however, complete returns are not available. During 1912, 1,072,464 pairs of rabbits and hares were treated in Victoria, and 274,379 rabbits in South Australia. Exclusive of Victoria, for which State particulars are not available, the returns shew that 70,803 tons of ice, valued at £147,512, were manufactured in the Commonwealth in 1912.

12. **Biscuit Manufactories.**—The following table gives particulars regarding establishments at which the manufacture of biscuits, cakes, etc., was carried on in each State during the year 1912:—

BISCUIT, Etc., MANUFACTORIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	7	5	15	3	3	6	39
" employees	1,466	1,394	374	112	140	155	3,641
Actual horse-power of engines employed	954	271	132	59	105	62	1,583
Approx. value of land and buildings	£ 102,375	66,150	32,579	17,750	10,752	24,000	253,606
" plant and machinery	£ 102,089	57,450	21,382	9,969	13,968	12,084	216,942
Total amount of wages paid during year	£ 78,960	95,770	34,891	9,809	12,475	10,638	242,573
Value of fuel used	£ 7,973	9,225	1,706	1,675	1,245	1,390	23,214
Value of raw material worked up	£ 373,809	366,796	90,246	24,932	37,362	38,406	931,551
Total value of output	£ 558,836	599,178	179,807	54,766	64,097	61,804	1,518,488
Value added in process of manufacture	£ 185,027	232,382	89,561	29,534	26,735	23,398	586,937

13. **Jam and Fruit Preserving, Pickles, Sauces, and Vinegar Manufactories.**—The jam and fruit preserving industry has increased in importance of late years, consequent on the extension of fruit-growing. As an exporting industry it is comparatively young, but is of increasing value, and is stated to be capable of considerable expansion. The subjoined table gives particulars of factories at which these industries were carried on in each State during the year 1912. Separate returns for the individual industries are not available for most of the States.

JAM AND FRUIT PRESERVING, PICKLES, SAUCES, AND VINEGAR MANUFACTORIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	37	31	11	28	6	20	133
" employees	1,204	1,737	191	530	81	756	4,499
Actual horse-power of engines employed	247	304	81	107	48	509	1,296
Approx. value of land and buildings	£ 95,330	119,311	11,390	31,045	6,602	53,365	317,043
" plant and machinery	£ 44,266	50,761	5,479	12,215	1,487	22,260	136,468
Total amount of wages paid during year	£ 75,309	110,740	10,380	26,283	5,848	46,578	275,138
Value of fuel used	£ 4,048	7,782	597	2,524	311	3,576	18,838
Value of raw material worked up	£ 377,574	526,493	38,772	125,382	13,720	194,239	1,276,180
Total value of output	£ 541,413	798,386	62,983	197,388	28,668	260,207	1,894,045
Value added in process of manufacture	£ 163,839	271,893	24,211	72,006	9,948	65,968	607,865

Quantity and Value of Production, 1912. The following table shews the quantity and value of jams, pickles, and sauces manufactured in each State during the year 1912:—

QUANTITY AND VALUE OF JAMS, PICKLES, AND SAUCE MANUFACTURED, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
QUANTITY (,000 OMITTED).							
Jam ... lbs.	28,422	28,949	*4,861	7,169	460	16,030	85,891
Pickles ... pints	2,581	1,482	102	328	193	24	4,710
Sauce ... pints	2,493	5,886	323	1,389	503	86	10,680
VALUE.							
Jam ... £	383,125	507,886	*57,531	96,691	7,505	171,812	1,224,550
Pickles ... £	50,421	37,892	2,116	6,319	4,842	456	101,846
Sauce ... £	50,233	154,422	5,889	26,901	9,067	1,656	248,168

* Including fruit, preserved and pulped, 4,100,090 lbs., £44 461.

14. **Confectionery.**—The following table shews the position of the confectionery industry in 1912, and its growth will be apparent when it is stated that at the close of 1900 there were in New South Wales 16 establishments, with 706 employees, and in Victoria 16 establishments, employing 731 persons, using plant and machinery valued at £2815 in the former and £19,070 in the latter State.

CONFECTIONERY FACTORIES, 1912.

Items,	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories ...	44	28	10	7	4	3	96
" employees ...	1,415	1,437	392	271	122	19	3,656
Actual horse-power of engines employed	464	476	66	149	103	12	1,270
Approx. value of land and buildings	£ 169,841	71,640	20,750	36,746	21,780	3,100	323,857
" plant and machinery	£ 81,471	60,169	16,678	27,619	13,600	605	200,142
Total amount of wages paid during year	£ 101,911	100,150	28,308	19,703	11,975	1,321	263,368
Value of fuel used	£ 5,800	6,983	944	2,419	1,312	139	17,597
Value of raw material worked up	£ 455,933	365,483	40,731	57,163	27,945	2,225	949,480
Total value of output	£ 752,993	539,148	110,801	102,986	42,629	4,850	1,553,407
Value added in process of manufacture	£ 297,060	173,665	70,070	45,823	14,684	2,635	803,927

15. **Flour Mills.**—The following table shews the position of the flour-milling industry in the year 1912:—

FLOUR MILLS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.*	W.A.*	Tas.*	C'w'lth.
Number of factories ...	69	61	11	51	17	18	227
" employees ...	964	845	184	569	215	125	2,902
Actual horse-power of engines employed	4,505	4,602	910	3,006	1,238	596	14,847
Approx. value of land and buildings	£ 376,611	222,704	55,878	118,251	81,561	46,270	901,275
" plant and machinery	£ 333,068	261,403	71,622	145,118	67,034	29,795	908,040
Total am't of wages paid during year	£ 124,132	95,266	23,842	68,046	28,185	12,829	352,300
Value of fuel used	£ 23,734	22,858	3,107	16,133	6,768	2,964	75,564
Value of raw material worked up	£ 2,317,478	2,179,608	282,336	954,133	420,537	210,748	6,364,840
Total value of output	£ 2,845,308	2,565,014	349,627	1,120,442	525,616	240,296	7,646,303
Value added in process of manufacture	£ 527,830	385,406	67,291	166,309	105,079	29,548	1,281,463

* The manufacture of cornflour, oatmeal, etc., was worked in conjunction with these establishments.

(i.) *Production of Flour Mills, 1908 to 1912.* The production of flour by the mills in each State of the Commonwealth in the years 1908 to 1912 was as follows:—

FLOUR MILLS—PRODUCTION, 1908 to 1912.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	C'wealth.
	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*	Tons.*
1908	180,843	192,687	22,266	107,742	31,424	17,426	552,388
1909	214,426	215,547	29,451	97,967	24,878	21,419	603,688
1910	242,813	225,282	27,559	95,885	36,818	20,925	649,282
1911	253,556	247,434	27,960	100,374	40,642	21,335	691,301
1912	255,359	225,376	25,855	103,100	49,319	18,044	677,053

* Tons of 2000 lbs.

The total production of flour for the Commonwealth for 1912, viz., 677,053 tons, was valued at £5,796,251; in addition 302,363 tons of bran and pollard, valued at £1,717,949, were made. The total quantity of wheat ground in 1912 was 32,711,285 bushels.

16. **Sugar Mills.**—The following table shews the position of the cane-crushing branch of the sugar-making industry in 1912. This industry is carried on in Queensland and New South Wales, the only States of the Commonwealth in which the sugar-cane is grown.

SUGAR MILLS, 1912.

Items.	N.S.W.	Queensland.	Total.
Number of factories	3	47	50
" employees	469	3,891	4,360
Actual horse-power of engines employed ...	2,425	10,552	12,977
Approximate value of land and buildings £	55,190	297,071	352,261
" " plant and machinery £	466,639	1,836,046	2,302,745
Total amount of wages paid during year £	42,490	319,494	361,984
Value of fuel used	4,459	36,061	40,520
Value of raw material worked up	105,327	747,557	852,884
Total value of output	216,962	1,388,626	1,605,588
Value added in course of manufacture £	111,635	641,069	752,704

The product of the sugar mill is raw sugar and molasses, the former being sent to the refineries in different parts of Australia for further treatment. Part of the molasses produced is used in distillation, part is turned into food cake for cattle, and part is used for manuring land, but the greater part produced is put to no use whatever. The following tables shew the progress of this industry in each State from the dates at which information is first obtainable :—

SUGAR MILLS, NEW SOUTH WALES, 1870 to 1912.

Items.	1870.	1877.	1886.	1891.	1896.	1901.	1909.	1910.	1911.	1912.
No. of factories	27	50	64	33	23	12	4	4	4	3
" employees	...	1,065	2,259	1,621	1,475	695	529	506	469	469
Cane crushed tons	...	...	...	...	...	...	131,083	160,311	167,799	141,274
Sugar produced	...	...	...	...	...	...	...	...	...	...
tons	677	7,537	13,750	16,033	28,557	19,519	14,610	20,115	17,299	16,817
Molasses produced	...	...	...	...	...	...	...	...	...	...
gals.	...	345,543	507,000	1,074,080	2,520,580	1,300,909	1,072,400	918,900	796,440	667,100

The reduction in the number of New South Wales mills is due chiefly to the tendency towards concentration of cane-crushing in mills fitted with modern machinery, and the consequent closing of the small home mill. On the north coast of New South Wales some land formerly devoted to sugar-growing has been turned into pastures in connection with the dairying industry.

SUGAR MILLS, QUEENSLAND, 1868 to 1912.

Items.	1868.	1876.	1886.	1891.	1896.	1901.	1909.	1910.	1911.	1912.
No. of factories	10	70	118	68	63	52	46	49	49	47
" employees	...	*	*	*	3,796	*	3,848	4,036	4,295	3,891
" acres	...	...	...	...	...	...	...	...	...	...
crushed	...	7,245	40,756	36,821	66,640	78,160	1,163,569	1,840,447	1,534,451	994,212
Sugar produced	...	...	...	...	...	...	...	...	...	...
tons	...	8,214	59,225	51,219	100,774	129,858	131,584	210,756	173,296	113,060
Molasses produced	...	...	...	...	...	...	...	...	...	...
gals.	68,622	416,415	1,784,266	1,640,662	2,195,470	3,679,952	4,763,635	7,329,870	6,451,192	4,988,988

* Not available. † 1890. ‡ Tons of cane crushed.

Information regarding the cultivation of sugar-cane and the bounties payable on cane grown by white labour may be found in the section of this book dealing with *Agricultural Production*. (See pages 336 to 340.)

17. **Sugar Refineries.**—The establishment of the sugar-refining industry considerably antedates the establishment of the sugar-milling industry, the raw material operated upon being originally brought chiefly from Mauritius and the East. In 1912 there were two sugar refineries in each of the States of Victoria and Queensland, and one in each of the States of New South Wales and South Australia. The returns for the individual States cannot be disclosed.

In the six refineries in the Commonwealth, an average number of 1608 hands was employed during the year 1912. The approximate value of land and buildings was £418,755; of plant and machinery, £942,599; and the total amount of wages paid during the year was £191,246.

As regards production, the amount of crude sugar used was 236,254 tons, and of refined sugar produced 229,573 tons, valued at £3,834,497.

18. **Breweries.**—Established at an early date in Australia, the main feature of the history of the brewing industry has been the change from the small local brewery in every township of moderate size to the large centralised city brewery. A recent amalgamation in Melbourne resulted in the closing of several large breweries. A workmen's co-operative brewery has been opened in Sydney and a co-operative brewery has been opened in Melbourne by a number of "free" hotelkeepers.

The following table gives particulars of breweries in each State during the year 1912:—

BREWERIES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lt'h.
Number of factories ...	33	29	11	12	20	5	110
" employees ...	1,020	1,008	494	353	504	153	3,532
Actual horse-power of engines employed ...	1,098	2,517	300	448	1,197	118	5,678
Approx. value of land and buildings ...	£ 307,073	384,207	132,020	118,458	188,921	395,950	1,526,629
Approx. value of plant and machinery ...	£ 333,716	325,658	102,850	82,073	193,549	40,878	1,078,724
Total amount of wages paid during year ...	£ 142,347	149,605	63,122	50,885	98,847	19,006	523,612
Value of fuel used ...	£ 21,663	24,619	6,887	7,994	13,504	2,239	76,906
Value of raw material worked up ...	£ 577,905	436,717	178,340	101,125	153,965	46,018	1,494,070
Total value of output ...	£ 1,239,438	980,927	460,568	322,119	467,012	127,786	3,647,850
Value added by process of manufacture ...	£ 711,533	544,210	282,228	220,994	313,047	81,768	2,153,780

Production and Materials Used, 1912. The following table shews the quantity and value of ale and stout brewed and the quantity of raw materials used in each State during the year 1912:—

PRODUCTION AND MATERIALS USED IN BREWERIES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
ALE AND STOUT BREWED.							
Quantity gallons	21,126,426	20,247,337	6,649,493	5,236,673	5,419,187	1,992,766	60,671,882
Value ...	£ 1,264,000	961,000	451,000	315,519	458,000	125,000	3,374,519
RAW MATERIALS USED.							
Malt ... bush.	773,194	566,779	224,852	130,510	167,425	77,383	1,940,143
Hops ... lbs.	891,535	659,323	335,009	179,591	244,893	118,372	2,428,723
Sugar ... cwt.	100,959	119,667	53,340	27,790	29,175	9,362	340,293
RAW MATERIALS USED PER 1000 GALLONS OF ALE AND STOUT PRODUCED.							
Malt ... bush.	36.60	27.50	33.81	24.92	30.89	38.83	31.98
Hops ... lbs.	42.20	32.56	50.38	34.29	45.19	59.40	40.03
Sugar ... cwt.	4.78	5.91	8.02	5.31	5.38	4.70	5.61

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19. **Distilleries.**—The subjoined table gives particulars of distilleries in each State during the year 1912. There are no distilleries in either of the States of Western Australia or Tasmania.

DISTILLERIES, 1912.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	3	7	3	16	...	...	99
" employees	20	41	33	69	...	...	163
Actual horse-power of engines employed ...	114	157	66	188	...	...	525
Approximate value of land and buildings £	17,330	84,290	13,849	25,067	...	...	140,536
Approx. value of plant and machinery £	47,369	62,790	18,261	20,743	...	...	149,163
Total amount of wages paid during year £	3,591	2,271	4,861	6,805	...	...	17,528
Value of fuel used	£ 1,040	907	1,683	1,765	...	...	5,395
Value of raw materials worked up	£ 25,120	23,869	8,743	46,379	...	...	104,011
Total value of output	£ 46,017	33,147	68,808	73,971	...	...	221,943
Value added in process of manufacture £	20,897	9,278	60,065	27,692	...	...	117,932

Production of Spirits and Materials Used, 1912. The total quantity of brandy distilled in 1912 was 151,952 proof gallons, and of other spirits was 2,169,668 proof gallons. The materials used comprised 460,929 cwt. of molasses and sugar, and 2,320,465 gallons of wine. Particulars for the separate States are not available for publication.

20. **Tobacco, Cigars and Cigarettes.**—During the year 1912 there were thirty-three establishments in which the manufacture of tobacco, cigars, and cigarettes was carried on. There were no factories engaged in this industry in Tasmania.

TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1912.

Items.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'w'lh.
Number of factories	11	16	3	3	2	...	35
" employees	1,425	1,788	103	142	26	...	3,484
Actual horse-power of engines employed ...	596	270	24	22	5	...	917
Approx. value of land and buildings £	155,922	172,093	5,450	12,554	3,003	...	349,022
" plant and machinery £	100,101	106,806	8,579	11,290	518	...	237,294
Total amount of wages paid during year £	143,558	191,162	7,606	14,252	1,503	...	358,081
Value of fuel used	£ 976	2,504	217	560	10	...	4,267
Value of raw material worked up	£ 895,778	674,017	31,971	19,005	1,942	...	1,622,713
Total value of output	£ 1,394,624	1,196,151	57,875	41,044	6,463	...	2,696,157
Value added in process of manufacture £	498,846	522,134	25,904	22,039	4,521	...	1,073,444

(i.) *Quantity of Goods Produced, and Tobacco Leaf Used, 1912.* The following table shews the quantity of goods produced in tobacco factories in each State, and the quantities of imported and Australian-grown leaf used during the year 1912 :—

PRODUCTION OF TOBACCO FACTORIES AND QUANTITY OF LEAF USED, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lh.
QUANTITY (,000 OMITTED).							
Manufact'd tobacco lbs.	4,171	5,642	193	289	4	...	10,299
Cigars	80	288	...	15	6	...	389
Cigarettes	No. 7,369	23,334	...	1,204	493	...	32,400
	lbs. 2,378	227	...	...	1	...	2,606
	No. 1,045,931	97,400	...	...	434	...	1,143,815
TOBACCO LEAF USED (,000 OMITTED).							
Australian leaf... lbs.	761	165	172	103	1	...	1,202
Imported leaf ... lbs.	5,306	5,137	4	165	13	...	10,625

(ii.) *Development of Industry.* This industry was among the first to be established in Australia. In 1861 New South Wales had eleven factories, producing 177,744 lbs. of manufactured tobacco; in the same year there was one factory in Victoria, but the quantity of tobacco manufactured is not available. The Australian market has for many years been largely supplied with local manufactures. The quantities imported into Australia during 1912 were—manufactured tobacco 2,610,816 lbs., cigars 408,607 lbs. and cigarettes 147,365 lbs., while the quantities manufactured in Australian factories were respectively 10,298,241 lbs., 388,906 lbs. and 2,605,840 lbs. The following tables show the development of the tobacco industry in the several States and the Commonwealth during recent years:—

DEVELOPMENT OF TOBACCO, CIGAR, AND CIGARETTE FACTORIES, 1908 to 1912.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
											£	£	£	£	£
N.S.W.	12	15	13	10	11	1,309	1,250	1,412	1,431	1,425	119,012	119,676	125,703	92,138	100,101
Vic.	13	14	14	15	16	2,542	2,449	2,248	2,012	1,788	100,880	104,973	106,521	103,247	106,806
Q'land	2	2	2	3	3	79	90	87	120	103	2,300	4,350	5,318	7,573	8,579
S. Aus.	3	3	3	3	3	175	180	154	146	142	12,084	12,084	12,101	11,138	11,290
W. Aus.	3	3	3	2	2	32	22	22	21	26	237	291	708	450	518
Tas. *	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
C'wlth.	33	37	35	33	35	4,137	3,991	3,923	3,730	3,484	234,573	241,374	250,351	214,576	227,294

PRODUCTION.

State.	Tobacco made.					Cigars made.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W.	3,916,388	3,694,918	3,850,154	3,996,471	4,170,853	57,716	57,148	73,194	87,818	80,537
Vic.	5,330,953	5,160,728	5,507,524	5,519,264	5,641,647	199,847	210,766	229,315	246,400	287,575
Q'land	152,331	187,059	195,752	204,921	192,779	...	...	...	1,784	...
S. Aus.	434,636	393,913	377,556	325,300	288,813	9,733	10,001	11,594	14,191	14,808
W. Aus.	3,807	3,549	2,100	2,440	4,149	7,527	7,415	5,800	5,934	5,986
Tas. *	...	...	...	...	...	...	...	...	...	...
C'wlth.	9,838,115	9,440,167	9,933,087	10,048,396	10,298,241	274,823	285,230	319,903	356,127	388,906
State.	Cigarettes made.					Leaf used.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
N.S.W.	1,119,269	1,300,045	1,548,872	1,899,462	2,377,554	4,589,875	4,417,173	4,945,868	5,363,161	5,066,197
Vic.	402,548	323,086	310,711	263,297	227,164	5,862,567	4,934,548	5,390,921	5,125,386	5,302,487
Q'land	...	...	...	...	...	152,188	226,706	256,860	181,749	175,875
S. Aus.	...	...	...	...	...	427,588	363,564	346,259	312,038	267,838
W. Aus.	561	548	2,595	970	1,122	17,591	17,659	10,867	10,690	14,261
Tas. *	...	...	...	...	...	...	...	...	...	...
C'wlth.	1,522,398	1,623,679	1,862,178	2,163,729	2,605,840	10,989,809	9,959,650	10,950,775	10,993,024	11,826,658

* There are no tobacco factories in Tasmania.

21. *Woollen and Tweed Mills.*—The manufacture of woollens and tweeds was established in Australia at an early period in its history, the first record in New South

Wales dating back to 1801, and was under Government control, when a few blankets were made by the convicts; the first record in Victoria was in 1867. The following table, which gives particulars of the mills in each State during the year 1912, shews that the industry is now well established:—

WOOLLEN AND TWEED MILLS, 1912.

Items.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	C'with.
Number of factories	14	10	2	2	...	4	32
" employees	1,137	1,672	161	180	...	226	3,379
Actual horse-power of engines employed ...	937	2,341	137	180	...	97	3,692
Approx. value of land and buildings £	118,803	146,689	11,878	8,829	...	20,850	307,049
" plant and machinery £	137,030	275,732	26,278	20,037	...	38,750	497,827
Total amount of wages paid during year £	84,858	115,096	8,759	9,707	...	14,141	232,561
Value of fuel used	5,860	13,668	*	*	...	1,184	22,709
Value of raw material worked up	172,909	245,220	*	*	...	18,833	468,728
Total value of output	342,354	473,880	*	*	...	43,359	930,485
Value added in process of manufacture £	169,445	228,660	*	*	...	24,526	461,757

* As there are only two factories in each of the States of Queensland and South Australia particulars of output, etc., are not disclosed: the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1908 to 1912.* The progress of woollen and tweed manufactories during the last five years is shewn in the following table for each State in which mills were in operation:—

DEVELOPMENT OF WOOLLEN MILLS IN AUSTRALIA, 1908 to 1912.

State.	Number of Factories.					Number of Persons Employed.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
N.S.W.	5	7	8	13	14	455	628	748	951	1,137	£ 43,933	£ 82,117	£ 109,473	£ 122,927	£ 137,030
Vic.	9	9	9	10	10	1,757	1,717	1,657	1,675	1,672	263,100	265,008	247,791	267,932	275,732
Q'land.	1	*2	*2	*3	2	97	*165	*175	*173	164	19,364	*28,634	*30,144	*30,300	26,278
S. Aus.	2	2	2	2	2	145	177	172	169	180	11,200	10,763	10,763	18,750	20,037
W. Aus.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tas.	4	4	4	4	4	263	278	278	232	226	33,250	37,250	38,750	38,950	38,750
C'with.	21	24	25	32	32	2,717	2,965	3,030	3,200	3,379	370,847	423,772	436,921	478,859	497,827

* Including one cotton ginning establishment.

(ii.) *Quantity and Value of Production, 1912.* The production of the woollen mills of Australia consists chiefly of tweed cloths, flannels, and blankets, all of which have acquired a reputation for purity and durability. Detailed particulars for the several States are not available for publication. The total length of tweed and cloth manufactured was over 2,250,000 yards, valued at, approximately, £350,000. In New South Wales 1,143,046 yards of tweed and cloth, in Victoria 1,013,444 yards, and in Tasmania 20,549 yards were manufactured. The production of flannel in the Commonwealth in 1912 amounted to over 5,000,000 yards, valued at £350,000, and of blankets, shawls, and rugs upwards of 850,000, valued at about £230,000, were manufactured.

No cotton spinning or weaving or linen weaving is carried on in Australia. Cotton ginning has been carried on at periods far apart in the northern States, and a mill was lately reopened at Ipswich in Queensland. For particulars of the quantity ginned on which bounties were paid, see page 351.

22. **Boots and Shoes.**—Among the manufactories of Australia the boot and shoe industry holds an important place both in respect to the employment afforded by it and the range of its output. The following table shews particulars of this industry for each State during the year 1912:—

BOOT AND SHOE FACTORIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Number of factories	103	151	31	24	10	13	332
" employees	4,391	6,774	1,017	727	179	253	13,341
Actual horse-power of engines employed	984	1,168	233	164	29	68	2,646
Approx. value of land and buildings £	238,019	208,499	46,438	73,693	13,490	18,520	598,659
" " plant and machinery £	149,233	170,002	37,143	24,881	7,420	9,335	398,014
Total amt. of wages paid during year £	389,040	570,025	81,731	67,184	18,528	17,957	1,144,465
Value of fuel used	£ 5,435	9,292	867	1,176	359	115	17,244
Value of raw material worked up £	722,596	1,132,045	139,627	124,141	36,247	30,094	2,184,750
Total value of output	£ 1,267,555	1,951,998	256,781	224,608	61,259	57,170	3,819,371
Value added in process of manufacture £	544,959	819,953	117,154	100,467	25,012	27,076	1,634,621

(i.) *Progress of Industry, 1908 to 1912.* The progress of the industry in the last five years is shewn in the following table :—

DEVELOPMENT OF BOOT AND SHOE FACTORIES, 1908 to 1912.

State.	No. of Factories.					No. of Persons Employed.					Approximate Value of Plant and Machinery.				
	1908	1909	1910	1911	1912	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912
N.S.W.	105	102	106	106	103	4,650	4,460	4,475	4,411	4,391	£ 134,575	£ 141,822	£ 149,228	£ 156,643	£ 149,233
Victoria	139	136	144	154	151	6,348	6,894	6,832	7,001	6,774	123,204	129,411	136,195	159,538	170,002
Q'land.	27	25	30	29	31	1,094	1,135	1,120	1,073	1,017	26,652	25,712	34,651	33,031	37,143
S. Aust.	24	23	23	26	24	1,077	1,069	882	802	727	30,748	29,644	30,079	24,858	24,881
W. Aust.	10	11	10	11	10	185	204	203	213	179	5,967	6,735	6,100	7,510	7,420
Tas. ...	23	18	24	15	13	252	261	298	272	253	3,185	4,410	4,565	8,299	9,335
C'wealth	328	315	337	341	332	13,606	14,023	13,810	13,772	13,341	324,331	337,734	360,818	389,879	398,014

(ii.) *Value and Quantity of Production, 1912.* The number and value of boots and shoes and slippers made at factories in each State during the year 1912 are shewn in the following table :—

PRODUCTION OF BOOT AND SHOE FACTORIES, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'w'lth.
QUANTITY (,000 OMITTED).							
Boots and shoes ... Pairs	3,926	4,967	706	641	190	161	10,591
Slippers ... Pairs	358	221	51	88	...	1	669
Uppers* ... Pairs	62	15	8	14	3	3	105
VALUE.							
Boots and shoes ... £	1,197,441	1,909,250	240,105	207,223	56,452	54,060	3,664,531
Slippers ... £	33,934	22,000	4,750	4,676	...	178	65,538
Uppers* ... £	14,878	3,750	2,466	2,102	832	670	24,698

* Made for other than factory use.

23. **Hats and Caps.**—The manufacture of hats and caps is now well established in the Commonwealth. The position of the industry in the several States in 1912 is shewn in the following table :—

HAT AND CAP FACTORIES, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	35	39	4	2	1	...	81
" employees	1,597	1,803	131	119	5	...	3,655
Actual horse-power of engines employed	626	415	17	50	...	...	1,108
Approx. value of land and buildings	£ 118,103	91,643	9,300	4,661	780	...	224,487
" plant and machinery	£ 61,873	53,007	8,084	4,762	...	...	127,826
Total amount of wages paid during year	£ 111,137	137,457	8,679	11,277	234	...	268,764
Value of fuel used...	£ 4,972	5,095	228	*	*	...	11,061
Value of raw material worked up	£ 149,334	189,267	13,189	*	*	...	364,792
Total value of output	£ 360,449	413,443	27,511	*	*	...	830,746
Value added in process of manufacture	£ 211,115	224,176	14,322	*	*	...	465,954

* As there are only two factories in South Australia and one in Western Australia, details relating to output, etc., are not available for separate publication; the amounts, however, are included in the totals for the Commonwealth.

(i.) *Progress of Industry, 1908 to 1912.* As appears from the following table, which shews the progress of this industry in the States in which it was carried on during the years 1908 to 1912, there has been a considerable investment of capital in these establishments in New South Wales and Victoria during recent years, and the industry is now in a flourishing condition in both these States.

DEVELOPMENT OF HAT AND CAP FACTORIES, 1908 to 1912.

State.	Number of Factories.					No. of Persons employed.					Approximate Value of Plant and Machinery.				
	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.	1908.	1909.	1910.	1911.	1912.
N.S.W.	26	30	29	32	35	1,221	1,349	1,398	1,566	1,597	£ 34,315	£ 39,966	£ 52,057	£ 60,807	£ 61,873
Vic.	34	35	42	43	39	1,520	1,688	1,890	2,017	1,803	29,650	35,427	43,447	51,849	53,007
Q'land.	4	5	5	4	4	129	173	147	142	131	7,662	7,420	7,591	7,330	8,084
S. Aust.	1	2	2	2	2	57	144	166	126	119	3,721	5,182	5,064	4,687	4,762
W Aust.	...	1	1	1	1	...	7	5	5	5	...	50	30	100	100
C'wlth.	65	73	79	82	81	2,927	3,361	3,606	3,856	3,655	75,348	88,045	108,189	124,773	127,826

(ii.) *Quantity and Value of Production, 1912.* Particulars regarding the quantity and value of the production of hat and cap factories in each State are not available for separate publication. The total value of hats and caps made in Australia in 1912 was £822,222.

24. **Coach and Wagon Building Works.**—This industry forms the principal branch of manufacture in Class XI. (see § 1, 3 above). The subjoined table gives particulars of factories in this branch of industry in each State during the year 1912. The returns include establishments for the manufacture of wheels, spokes, etc.

COACH AND WAGON BUILDING WORKS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of factories	250	275	91	100	34	26	776
" employees	2,680	2,854	810	974	351	204	7,873
Actual horse-power of engines employed	768	509	246	437	142	49	2,151
Approx. value of land and buildings	£ 322,327	248,026	62,726	131,571	43,435	20,175	828,560
" plant and machinery	£ 69,732	53,470	26,018	28,161	13,315	4,764	195,460
Total amount of wages paid during year	£ 244,577	233,738	48,622	82,888	40,886	14,603	665,614
Value of fuel used	£ 9,108	8,169	1,124	3,420	2,319	645	24,785
Value of raw material worked up	£ 252,045	261,363	59,809	89,949	39,621	17,240	714,237
Total value of output	£ 631,838	623,843	172,827	235,941	96,721	39,563	1,902,524
Value added in process of manufacture	£ 379,793	362,480	113,018	151,992	58,891	22,123	1,088,297

25. **Furniture and Cabinet Making and Billiard Table Making.**—These industries constitute the principal manufactures in Class XIII. (see § 1, 3 above). The following table gives particulars for 1912:—

FACTORIES FOR FURNITURE AND CABINET MAKING AND BILLIARD TABLE MAKING, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	156	177	68	37	25	17	490
" employees	2,898	2,048	1,083	996	411	312	7,748
Actual horse-power of engines employed	1,161	685	585	746	242	89	3,508
Approx. value of land and buildings	£ 304,405	236,085	80,842	67,300	36,556	24,880	750,068
" plant and machinery	£ 48,082	33,272	27,204	30,838	11,882	4,282	155,511
Total amount of wages paid during year	£ 306,126	205,967	98,873	109,459	51,676	20,358	792,456
Value of fuel used	£ 5,014	2,455	2,217	2,914	1,231	476	14,309
Value of raw material used ...	£ 263,688	265,528	102,992	79,242	62,351	19,492	813,293
Total value of output	£ 718,600	569,193	247,675	223,770	129,442	53,469	1,942,149
Value added in process of manufacture	£ 434,912	303,665	114,683	144,528	67,091	33,977	1,128,866

26. **Electric Light and Power Works.**—Particulars of the electric light and power works of the Commonwealth in the year 1912 are given in the subjoined table. In 1907 there were 128 establishments employing 1569 hands whose salaries and wages amounted to £202,490: in 1912 these had increased to 179 establishments, 2663 hands, salaries and wages £398,380, while the value of plant and machinery had increased during the five years from £2,576,431 to £3,500,139.

ELECTRIC LIGHT AND POWER WORKS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	113	24	7	3	20	12	179
" employees	1,073	666	158	329	257	180	2,663
Actual horse-power of engines employed	71,141	20,005	8,329	9,344	18,286	5,032	132,137
Approx. value of land and buildings	£ 494,797	211,699	28,999	110,010	77,720	12,375	935,600
" plant and machinery	£ 1,350,488	912,712	92,908	510,783	492,767	140,481	3,500,139
Total amount of wages paid during year	£ 161,644	89,435	22,621	53,505	49,516	21,659	398,380
Value of fuel used	£ 205,494	46,448	19,730	27,531	84,758	46,941	430,902
Total value of output	£ 1,077,441	309,156	83,804	119,134	255,074	96,812	1,941,421

* Including manufacture of electric apparatus.

27. **Gas and Coke Works.**—There are gas works in operation in nearly all the chief towns in the Commonwealth. In New South Wales there are thirteen and in Queensland two coke factories which are worked as separate industries. The subjoined table gives particulars of gas and coke works in each State:—

GAS AND COKE WORKS, 1912.

Items.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'with.
Number of factories	*60	47	†17	5	4	3	136
" employees	1,747	1,835	475	387	106	124	4,674
Actual horse-power of engines employed	2,850	808	139	210	40	29	4,166
Approx. value of land and buildings	£ 695,458	473,995	133,209	9,444	25,200	31,650	1,368,956
" plant and machinery	£ 1399,779	1,277,824	457,024	363,732	60,662	154,708	3,722,729
Total amount of wages paid during year	£ 236,792	275,755	63,429	52,400	17,490	11,942	657,808
Value of fuel used	£ 68,377	...	3,628	1,865	2,420	1,510	77,900
Value of raw material used ...	£ 458,480	260,209	26,711	46,818	14,465	14,280	820,964
Total value of output	£ 1276,082	873,134	204,192	178,350	45,429	53,391	2,630,578
Value added in process of manufacture	£ 817,602	612,925	177,481	131,532	30,963	39,111	1,809,614

* Including 13 coke factories worked as separate industries. † Including 2 coke factories worked as separate industries.

The following table gives particulars regarding the quantity and value of the production of gas and coke works in each State during the year 1912 :—

PRODUCTION OF GAS AND COKE WORKS, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth
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QUANTITY.

Gas made	... 1000 cub. ft.	4,812,672	3,108,556	625,207	531,577	110,858	171,051	9,359,021
Coke	... tons	432,165	171,750	38,136	19,911	5,607	7,714	675,283

VALUE.

Gas	 £	757,677	773,000	171,030	135,267	31,671	44,864	1,913,509
Coke	 £	264,049	95,000	23,975	24,359	10,079	6,150	423,612

COAL USED.

Coal	 tons	708,586	284,670	67,153	43,366	10,052	13,775	1,127,602
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SECTION XIV.

WATER CONSERVATION AND IRRIGATION.

§ I. Artesian Water.

1. **General.**—In every country in which droughts are recurrent, there are few problems the solution of which is of greater importance than that of an adequate system of water conservation. Much has been done in the Commonwealth so far as the supply of water to centres of population is concerned, and a description of several of the metropolitan water works will be found herein, viz., in the section dealing with "Local Government." In May, 1912, an interstate conference on artesian water was held in Sydney, at which it was agreed that combined Governmental action should be taken with reference to delimitation of the artesian basin, hydrographic survey, analyses and utilisation of artesian water, etc.

(i.) *The Great Australian Artesian Basin.* In speaking of the "Great Australian Artesian Basin," the area is understood which includes (a) considerably more than one-half of Queensland, taking in practically all that State lying west of the Great Dividing Range, with the exception of an area in the north-west contiguous to the Northern Territory; (b) a considerable strip of New South Wales along its northern boundary and west of the Great Dividing Range; and (c) the north-eastern part of South Australia proper, together with the extreme south-eastern corner of the Northern Territory. This basin (shewn approximately by the map on page 505) is said to be the largest yet discovered, and is about 569,000 square miles, of which 376,000 square miles are in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The area of the intake beds is estimated at 60,010 square miles, viz., 50,000 square miles in Queensland and 10,010 square miles in New South Wales. A description of the basin and its geological formation will be found in previous issues of the Year Book (see No. 6, p. 569).

(ii.) *The Western Australian Basins.* The Western Australian Basins fall naturally within five distinct groups, viz., the Eucla Basin, in the extreme south-east of the State, and extending well into South Australia along the shores of the Great Australian Bight; the Coastal Plain Basin, west of the Darling Range; the North-West Basin, between the Murchison and Ashburton Rivers; the Desert Basin, between the De Grey and Fitzroy Rivers; and the Gulf Basin, between Cambridge Gulf and Queen's Channel.

The Recent and Tertiary strata which enter Western Australia at its eastern border, and which have a prevailing dip towards the Great Australian Bight, form the Eucla artesian water area. But where boring operations have been undertaken, the water has been found to be salt or brackish, and there are other conditions affecting the supply, such as local variations in the thickness of the beds, their relative porosity, and the unevenness of the floor upon which they rest, which, so far, have not been examined with sufficient thoroughness to enable many particulars to be given in regard to this basin.

In the Coastal Plain Basin to the west of the Darling Ranges artesian boring has, on the other hand, been carried on successfully for many years.

(iii.) *The Murray River Basin.* In August, 1910, a report was issued by the Government Geologist of South Australia on the geology of the country south and east of the Murray River, with special reference to subterranean water supply in wells and bores along the Pinnaroo and Bordertown railways. The tertiary formation in the district under consideration occupies the western portion of a vast basin or depression, of which the greater part extends eastward into Victoria and northward into New South Wales. This basin is bounded on the west by the azoic and palæozoic rocks of the Mount Lofty and other ranges, extending northwards from near the mouth of the Murray to the Barrier Ranges, and on the east and north-east by the ranges of Victoria and New South Wales. This tertiary water-basin is occupied by a succession of sedimentary formations, both porous and impervious. It is of interest to note that the waters of the Murray River are partly supplied by influx from the water-bearing beds of this basin; this is proved by the fact that, at low water, springs are observed at certain places flowing into it from beneath the limestone cliffs from Pyap Bend downwards. Similar springs must exist along the courses of other branches of the River Murray system, where they cut through the tertiary formation.

(iv.) *Plutonic or Meteoric Waters.* In previous Year Books will be found the theory of Professor Gregory¹ as to the origin of the water in the Australian artesian basin, together with the objections held thereto by the Government Geologist of New South Wales.² (See Year Book No. 6, p. 570.)

(v.) *Particulars of Artesian and Sub-artesian Bores, 1912.* The following table gives particulars of artesian and sub-artesian bores in each State and in the Commonwealth up to the end of the year 1912:—

COMMONWEALTH AND STATES.—PARTICULARS OF ARTESIAN AND SUB-ARTESIAN BORES, 1912.

Particulars.	N.S.W.*	Vict.*	Q'land.	S. Aust.*	W. Aust.†	Tas.	C'wlth.
Bores existing ... No.	488	130	2,065	94	64	...	2,841
Total depth bored ... feet	775,966	184,002	2,204,816	74,674	75,102	...	3,314,560
Daily flow ... ,000 gals.	63,499	†	529,807	†	24,000	...	...
Depth at which artesian water was struck—							
Maximum ... feet	4,338	558	5,045	4,850	4,006	...	5,045
Minimum ... feet	46	131	10	65	175	...	10
Temperature of flow—							
Maximum ... ° Fahr.	148	+	211	208	140	...	211
Minimum ... ° Fahr.	73	+	81	82	60	...	60

* Government bores only. † Exclusive of 36 private bores. ‡ Not available.

2. **New South Wales.**—Artesian boring in New South Wales dates from 1879, when a private bore was put down on the Kallara pastoral holding, between Bourke and Wilcannia. The first Government bore was that at Goonery, on the Bourke-Wanaaring road, completed in 1884. At the end of 1912, out of 488 known artesian bores in New South Wales, 193 were Government bores.

1. See J. W. Gregory, *F.R.S., D.Sc.*: "The Dead Heart of Australia," London, John Murray, 1906.

2. E. F. Pittman, *A.R.S.M.*, *Government Geologist of New South Wales*: "Problems of the Artesian Water Supply of Australia, with special reference to Professor Gregory's Theory." (Clarke Memorial Lecture, delivered before the Royal Society of New South Wales, 31st October, 1907.)

The distribution of these bores was as follows:—

NEW SOUTH WALES ARTESIAN BORES ON 31st DECEMBER, 1912.

Particulars.*	State.	Private.	Total.
Bores existing No.	193	295	488*
Total depth bored feet	379,195	396,771	775,966*
Daily flow gallons	63,498,969†	†	†
Depth at which water was struck—			
Maximum feet	4,338	3,550	...
Minimum "	89	46	...
Temperature of flow—			
Maximum ° Fahr.	139	148	...
Minimum "	77	73	...

* Exclusive of 21 Government and 23 private bores which failed; the total depth bored being 27,566 feet and 30,227 feet respectively. † Excluding the flow from seventeen pumping bores, the particulars of which are not available. ‡ Not available.

Of the wells at the end of 1912, the depth is stated in 487 cases, ranging from 46 to 4338 feet. There is a preponderance of wells from 1000 to 2000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the County of Stapylton, with a depth of 4338 feet and a daily outflow of 1,062,133 gallons; and at Dolgelly, in the Parish of Careunga, in County Stapylton, with a depth of 4086 feet, and an outflow of 622,185 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the County of Stapylton, which yields 1,133,300 gallons a day, and has a depth of 3225 feet.

The Zetz Spa, much used as a mineral water in New South Wales, comes from Ballimore, near Dubbo.

It may be said that the cost of artesian wells works out at an average of about 20s. per lineal foot; it depends, of course, upon the depth to which boring operations have to be extended, and on the accessibility of the bore to a railway station. The practice is to line the bore with three strings of casing, ten, eight and six inches in diameter respectively. The ten and eight inch strings are inserted as far as may be considered necessary, and the six-inch string generally taken to the bottom of the bore. Recent contract prices per lineal foot for a bore complete are as follows:—To 1000 feet, 27s. per foot; 1000 to 1500 feet, 17s. 9d.; 1500 to 2000 feet, 18s. 3d.; 2000 to 2500 feet, 19s. 3d.; 2500 to 3000 feet, 21s. 3d.; 3000 to 3500 feet, 23s. 9d.; 3500 to 4000 feet, 30s. The increased cost per lineal foot for the first 1000 feet is owing to the insertion of the three strings of casing.

3. **Victoria.**—Victoria lies altogether outside the Great Australian Artesian Basin, and as water is obtainable in most parts of the State at shallow depths, there has not been much occasion for artesian boring. As early as 1884, however, an artesian well was bored at Sale, which for a number of years gave a supply of about 100,000 gallons per day until, either through corrosion of the casing or by choking up with sand from below, the flow ceased. In 1905 a new bore was therefore put down, which at a depth of 277 feet yielded sufficient water to fill Lake Guthridge, a local depression. But as the water was impure, and contained too much sulphuretted hydrogen, boring operations were continued to 520 feet, when the lowering of the casing shut off the supply of water. A further bore was then put down at some distance from the first, and this, at a depth of 238 feet, yielded a fresh

and clear water supply, which at present is stated to be about 145,000 gallons per day. Further trouble, however, has been experienced owing to failure of casing, and a fresh bore is being put down.

In the late eighties a number of bores were put down in the North-Western part of the State, varying from 200 to over 2000 feet in depth, but without any notable success. In 1897 a Board reported on boring for artesian water supply in the Mallee country, but this report was adverse, except as regards the extreme northern portion thereof. In 1906 eight bores were put down on the Overnewton Estate, Maribyrnong, to depths varying from 147 to 272 feet; small supplies of good and medium water for stock purposes were obtained, but only one of the wells yielded water fit for domestic purposes. In 1908 boring was commenced in the Mallee country near the Border east of Pinnaroo in South Australia, and a line of bores from the Border to Kow Plains has proved the existence of a large sheet of underground water. Altogether, forty-two bores have been sunk, and their depths vary from 150 to 600 feet, the water rising to within from 200 to 7 feet of the surface. In three instances the bores flow, the water rising from four to seventeen feet above the surface. The fresh water extends nearly as far east as the 142nd meridian and its northern limit is approximately the 35th parallel. Information as to the geological formation of this district is given on page 499 preceding.

At the end of 1912 the number of existing Government bores in use in Victoria was 58, from which supplies are obtained by pumping. The total depth bored amounted to 22,000 feet, while the maximum and minimum depths at which water was struck were 588 and 131 feet respectively. There are also seventy-two existing private bores, with a total depth of about 162,000 feet.

4. **Queensland.**—A return relating to the 30th June, 1912, classifies the Queensland artesian bores under the following headings:—

QUEENSLAND ARTESIAN BORES ON 30th JUNE, 1912.

Sunk by—	Artesian Flows.	Sub-Artesian or Pumped Supplies.	In Progress, Abandoned, or Uncertain.	Total.
Government	35	36	151	222
Local governing authorities	19	9	18	46
Private owners	731	284	428	1,443
Total	785	329	597	1,711

Of the 785 flowing bores, 57 were of less than 10,000 gallons per day; 161 from 10,001 to 150,000 gallons; 318 from 150,001 to 750,000 gallons; 145 from 750,001 to 1,500,000 gallons; 65 from 1,500,001 to 2,500,000 gallons; and 39 from 2,500,001 to 4,500,000 gallons. The deepest well was one known as Binerah Run No. 3, White-wood, lying between the Barcoo and Thomson Rivers; this had a depth of 5045 feet, and was stated to yield 70,000 gallons daily. This flow is, of course, a comparatively small one, many wells yielding, when uncontrolled, from one to three million gallons a day. A well at Cumnamulla is stated to have a daily flow, when uncontrolled, of no less than 4,500,000 gallons. The waters of many of the wells have been analysed, and some found suitable for wool-scouring only, others are suitable for watering stock but not for irrigation, owing to the presence of alkali; others again serve for both stock and irrigation, while some, such as those containing sulphuretted hydrogen, are not of any use. Water fit for stock may generally be said to be "safe" for domestic purposes in spite of its slightly mineral taste. The wells yielding the mineral waters known as "Helidon Spa," "Boonah Spa," and "Junot Spa," which are much in use in Queensland and New South Wales, are shallow wells from 60 to 200 feet in depth.

The following table shews particulars as to Queensland bores at the end of June, 1913:—

QUEENSLAND ARTESIAN AND SUB-ARTESIAN BORES ON 30th JUNE, 1913.

Particulars.	State and Local Authorities.	Private.	Total.
Bores existing No.	249	1,816	2,065
Total depth bored feet	194,411	2,010,405	2,204,816
Daily flow gallons	32,181,215	497,626,145	529,807,360
Depth at which artesian water was struck—			
Maximum feet	4,256	5,045	...
Minimum "	354	10	...
Temperature of flow—			
Maximum °Fahr.	198	211	...
Minimum °Fahr.	85	81	...

5. *South Australia.*—The information about artesian wells is somewhat meagre. Early in 1908 a list of twenty-five of the principal Government bores was published, of which four were under 1000 feet in depth, twelve from 1000 to 2000 feet, two from 2000 to 3000 feet, and seven over 3000 feet. The deepest flowing well was at Goyder's Lagoon, on the Hergott to Birdsville route, measuring 4580 feet, and yielding 600,000 gallons per day. A bore at Patchawarra, 35 miles north of Innamincka, was, in October, 1912, down to 5161 feet, but had not at that depth struck the subterranean water. The maximum flow, viz., 1,250,000 gallons, is obtained at Coonie Creek.

The following table shews particulars as to South Australian bores at the end of December, 1912:—

SOUTH AUSTRALIAN BORES, 1912.

Particulars.	Artesian and Sub-artesian.
Bores existing	94
Total depth bored feet	74,674*
Daily flow gals.	†
Depth at which water was struck—	
Maximum feet	4,850
Minimum feet	233
Temperature of flow—	
Maximum °Fahr.	208
Minimum °Fahr.	82
Total cost of construction of bores up to end of year ...	£202,559
Expenditure during year on boring operations ...	£15,263

* Exclusive of abandoned bores.

† Not available.

(i.) *Bores along Bordertown Railway.* The sinking of bores across the Ninety-mile Desert between the Murray and the Victorian boundary was commenced in 1886 at Coonalpyn; with the exception, however, of salt water at 55 ft., none was reported to have been struck. Ki Ki bore was sunk in 1887, and at 361 ft. a good supply of water fit for stock was struck. Tintinarra bore was sunk in 1887; it was artesian when first tapped. The water was found to be fit for locomotive engines and is still used for that purpose. The bore at Emu Flat was also sunk in 1887.

In all these bores water was found in porous beds of Eocene (Tertiary) age.

(ii.) *Bores along and near Pinnaroo Railway Line.* Several bores have been successfully put down in the Pinnaroo country. In 1904 the first bore was sunk in this district at Cotton, and numerous successful bores have since been put down by the Public Works Department, and subsequently by the residents of the district. The depth of water level from the surface ranges from 15 to 200 feet, and the maximum outflow is 48,000 gallons per day at the Gosden bore. Several wells, ranging in depth from 55 ft. to 221 ft., have also been sunk in this district.

The latest Government bore is situated $7\frac{1}{2}$ miles south of Brown's Well, near the terminus of the proposed railway from Tailem Bend. The depth of this bore is 220 ft., and the water, which is in large supply, rises to within 52 ft. of the surface. The water is fresh, containing $\frac{1}{4}$ oz. salts and other solid matter per gallon.

6. Western Australia.—(i.) *The Goldfields Water Supply of Western Australia.* The scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population on the eastern goldfields of that State comes properly under the heading of "Water Supply Works." A description of the scheme is fully given in previous issues of the Year Book. (See No. 6, p. 576.)

In August, 1912, the administration of the Goldfields Water Supply and of the Mines Water Supply was transferred to a new department, the Water Supply, Sewerage and Drainage Department. The statistics in connection with this department will be found in the section of this book dealing with *Local Government*.

At the end of the year 1912 the total number of Government bores west of the Darling Range was 64, and there were 36 private bores recorded in addition. This record is, however, incomplete, and the following particulars refer to Government bores only. The total depth bored is given as 75,102 feet. The total cost of construction of State bores at the end of the year 1912 was about £123,900, of which amount £11,500 was spent in 1912. The total daily flow of the Government bores is stated as 24,000,000 gallons. The maximum and minimum depths of State bores were 4016 feet and 175 feet respectively, and the maximum and minimum temperatures 140° and 60° Fahrenheit. The maximum outflow, 4,000,000 gallons per day, was obtained at Leederville in connection with the Metropolitan Water Supply at 2097 feet. The expenditure for the year 1912-13 was £8000, and the total expenditure since the inception of the work approximates £126,000.

As already stated, no artesian water has been found east of the Darling Ranges, although a large number of shallow bores yield either fresh or salt water.

§ 3. Irrigation Plants.

1. General.—Australia's first experiments in irrigation were made with the object of bringing under cultivation areas in which an inadequate rainfall rendered agricultural and even pastoral occupations precarious and intermittent, and, although these original settlements have for the most part proved fairly successful, most of the States, instead of promoting new settlements in unoccupied regions, are adopting the policy of making existing settlement closer, by repurchasing big estates and large farms, subdividing them into holdings of suitable sizes for cultivation, and selling the land upon easy terms of payment. It is in connection with this Closer Settlement policy that the special value of irrigation is recognised.

2. New South Wales.—(i.) *Irrigation Trusts.* The first action by the Government of this State for the establishment of irrigation settlements was taken under Acts of Parliament which authorised the formation of irrigation trusts in the vicinity of Wentworth in 1890, Hay in 1892, and Balranald in 1893. The Wentworth Trust controlled

an area of 10,600 acres, but has been dissolved and its powers assumed by Government. A pumping plant has been provided and channels laid out for the irrigation of an area of 1500 acres, of which 1000 acres are at the present time under successful occupation, largely for the production of horticultural crops and a small amount of lucerne. The original area under the Hay Trust was 12,847 acres, but in 1896 this was reduced to 3000 acres. The pumping plant and channels provide for the irrigation of 900 acres, which are under occupation, principally in connection with the growth of fodder crops for dairying, a small area being under horticultural crops. No works for the supply of water have yet been carried out by the Balranald Trust, which controls an area of 1000 acres. It is improbable that any irrigation will be provided in this area in the near future.

(ii.) *Private Irrigation.* Irrigation by private individuals is almost entirely carried out by pumping plants licensed under the provisions of the Water Rights Act. The largest plants draw their supplies from the River Murray for irrigating areas of from 600 to 700 acres of lucerne grown for stock-feeding purposes.

(iii.) *The Murrumbidgee Northern Irrigation Scheme.* This scheme provides for the utilisation of a large proportion of the waters flowing from the Murrumbidgee catchment area in normal seasons. The works which are necessary to provide for the conservation of these waters consist in the first place of a large storage reservoir in which the water is to be retained by a weir known as the "Burrinjuck Dam." This dam is being constructed across the channel of the Murrumbidgee River, about three miles below the confluence of the Goodradigbee River. The catchment area above this point is 5000 square miles.

The retaining wall will have a total height of 240 feet from its crest to the deepest foundation level; the total length will be 784 feet curved in plan to a radius of 1200 feet; the thickness at the crest will be 18 feet and at the base 170 feet. The maximum depth of the water stored will be 224 feet, the total volume being 33,630 million cubic feet. The wall itself will contain about 600,000 tons of material, and will require about 50,000 tons of cement for its construction. The work is now partially completed and it is estimated that it will be finished in 1914. The object of constructing this weir is to regulate the supply of water, so that the large volumes which are afforded by the winter rains and the melting snows of the spring may be retained and made available to supplement the natural flow of the river in the dry months of the summer, when irrigation water is most required. The volumes of water thus made available for irrigation requirements will be conveyed in the channel of the Murrumbidgee River for a distance of 200 miles from the storage to a point above the town of Narrandera at Berembé, where a reservoir, known as the Berembé Weir, is in course of construction, with the object of diverting supplies by gravitation into the irrigation lands. A main canal, capable of carrying 1005 cubic feet per second, is being constructed from the Berembé Weir for the purpose of conveying the waters to the irrigable lands situated along the base of the hills to the west of the town of Narrandera.

It is proposed that the State Government shall acquire and subdivide for the purposes of intense culture the whole of these irrigable areas, which consist of about 200,000 acres of first-class and 360,000 acres of second-class land. The main canal will be capable of carrying to these areas only about one half of the water which will be made available for irrigation by the construction of the Burrinjuck dam. No determination has yet been arrived at as to whether the additional available volumes will be utilised for irrigating further areas of these same lands on the northern side of the river, or whether a separate canal will be constructed for the purpose of carrying supplies to lands on the southern side.

It is stated that the conditions as regards water-supply, soil, and climate are such as to ensure the success of the scheme, and it is anticipated that when the whole of the lands are settled there will be an addition of at least 50,000 people to the population within the district. It is expected that, in addition to the horticultural crops which

MAP SHEWING THE POSITION AND EXTENT OF THE "AUSTRALIAN
ARTESIAN BASINS."



This map was prepared by the Interstate Conference on Artesian Water, held in Sydney during May, 1912. It contains the latest facts relative to the various artesian basins of the Australian continent. Of these basins the most important is the Great Australian Basin, which is about 569,000 square miles in extent, viz.:—About 376,000 square miles in Queensland, 90,000 square miles in South Australia, 83,000 square miles in New South Wales, and 20,000 square miles in the Northern Territory. The Murray River Basin extends over South-Western New South Wales, North-Western Victoria, and South-Eastern South Australia. The Western Australian Basins fall naturally within five groups, viz.:—The Eucla Basin, the Coastal Plains Basin, the North-West Basin, the Desert Basin, and the Gulf Basin. (See also pages 498 to 503.)

will be grown, the supplies of fodder which will be afforded by the irrigation settlement will be sufficient to obviate the evil effects of droughts in the surrounding pastoral districts and will thus largely increase their stock-carrying capacity and productiveness.

(iv.) *Other Irrigation Schemes.* The following proposals are under investigation by the State Irrigation Department :—

- (a) *Lachlan River.* The construction of a storage reservoir on this river at a place known as Wyangala, below the confluence of the Abercrombie River, for the purpose of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping.
- (b) *Macquarie River.* The construction of a storage reservoir on this river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine.
- (c) *Murray River.* The construction of a storage reservoir across the Murray River at Camberona, above Albury, in order to supply water by gravitation through a canal which will be taken off at Bungowannah, below Albury, for the irrigation of high-class lands lying between the Murray and the Billa-bong Creek near the town of Berrigan.
- (d) *Hunter River.* The construction of storage reservoirs on the Upper Hunter or Goulburn River with a view to supplying water by pumping from the Hunter River to the adjoining lands and supplementing the water supply of Newcastle. It is stated that the valley of this river is one of the most fertile districts in the State and that it is capable of carrying a dense population under the conditions of intense culture by irrigation.
- (e) *Darling River.* The conversion of Lake Menindie into a large permanent storage by means of a diversion weir across the Darling River and of a canal through Lake Pamamaroo, the water so stored to be utilised in the irrigation of the bed of Lake Cawndilla and of certain lands to the south-west.
- (f) *Warragamba River.* A scheme has been prepared for the construction of a large storage dam on the Warragamba River, so as to retain a depth of 225 feet and a volume of 103,000 million gallons of water. This would be available for the supply of 80 million gallons daily for the domestic services of Sydney, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the county of Cumberland.

It is proposed that the water for domestic purposes should be conveyed and delivered at Potts Hill through 48 miles of open concrete channel and pipes; that the supplies for trade purposes should be delivered in the vicinity of the Great Western Railway, between St. Mary's and Penrith; and that the lands situated along the banks of the Nepean River and in the valley of South Creek should be irrigated.

3. *Victoria.*—(i.) *Classification of Works.* The Water Conservation Works in Victoria naturally divide themselves into those providing mainly a domestic supply, such as the Yan Yean works, controlled by the Melbourne and Metropolitan Board of Works; the Coliban, Broken River, Kerang Lakes, and Mallee Supply Works, which, although now administered by the State Rivers and Water Supply Commission, are properly local

government works; other works for domestic supply controlled by Water Works Trusts or Municipal Corporations; and irrigation works proper. With the exception of the last-named class particulars as to these works will be found in the section on "Local Government" of this book.

(ii.) *Works Controlled by the Commission.* With the exception of the First Mildura Irrigation and Water Supply Trust, all of the irrigation schemes and the more important domestic and stock water-supply works in rural districts are vested in and controlled by the State Rivers and Water Supply Commission, which was created by the Water Act 1905, in force since 1st May, 1906. The works under the control of this body, which is composed of three members, may be classified as follows:—(a) Irrigation schemes; and (b) Domestic and stock schemes, included in which are a number for providing town supplies, the principal being the Coliban system.

(a) *Irrigation Schemes.* This division comprises the schemes constructed and under construction for the supply of water to between twenty to thirty irrigation districts. Up to 1906 these schemes were controlled by local Trusts which had obtained the moneys for the construction on loans from the State. By the Water Act 1905 all local control was abolished and the districts were transferred to the State Rivers and Water Supply Commission. Since that date the Government has adopted a vigorous irrigation policy and the capital expenditure at 30th June, 1913, on water supply in the irrigation and water supply districts under the control of the Commission was £4,527,358. The irrigation works draw their supplies mainly from headworks constructed on the Murray, Goulburn, and Loddon rivers. The cost of these works, which now stands at £1,194,776, is not debited to the districts benefited, but is borne entirely by the State. Within the last three years the State has adopted the policy of purchasing large areas of land commanded by these schemes and subdividing them for intensive culture. The settlement of the areas on these lines will mean a large increase in the population of the State. The management and supervision of these areas were formerly vested in two bodies—the Closer Settlement Board and the Water Supply Commission, but in order to do away with this dual control, the Amending Closer Settlement Act of 1912 was passed, transferring to the Water Supply Commission the entire management, leasing, and general supervision of all lands within irrigation districts.

(b) *Domestic and Stock Schemes.* The second division takes into account the schemes constructed and under construction for the supply of water for domestic and stock purposes to very large tracts of country. The principal works of this division are situated in the Wimmera and Mallee districts, and cover an area of about 6000 square miles. Since its inception, the Commission has spent upon the various works in the Wimmera and Sea Lake district the sum of £250,000. In addition to the Commission's districts some large areas are still administered by local authorities.

It should be mentioned that in 1899 the State deemed it advisable to write off the sum of £1,073,000 from capital accounts of the local bodies then controlling the works in each of the above divisions.

(iii.) *Mildura.* The first settlement of Mildura dates from 1884. After being managed until 1887 by Chaffey Bros., and then until 1895 by the Mildura Irrigation Company Limited, it was in that year taken over by the First Mildura Irrigation Trust and has since then made great progress. Its population at the Census of 1911, was 6145. Water is pumped from the Murray River by five pumping stations, each capable of raising 2,500,000 gallons per hour. The length of the irrigation channels is 280 miles. For the year ending 30th June, 1913, the receipts of the Trust aggregated £30,695, and its expenditure £28,964. For the same period the area of land under cultivation and the record of water acres were 12,307 and 36,960 acres respectively, the value of the fruit crops for the year being £400,000.

No precise figures are available as to the capital cost of the works at Mildura; probably the sum was not less than £180,000. The amount due to Government is £73,929, exclusive of £13,303 for accumulations of interest.

(iv.) *Lands supplied with Water within the State.* The area of country lands within the State artificially supplied with water for domestic and ordinary use and for watering stock is approximately 20,500 square miles, equal to about 13,120,000 acres. The extent of land under irrigated culture, for all kinds of crop, is 249,983 acres, an increase of 20,150 acres over the area irrigated in the previous year. The above total includes about 14,500 acres, watered under yearly permits granting authority to divert water from streams throughout the State. Further progress has been made during the year in bringing all such diversions under the control of the Commission, 719 permits authorizing diversions for irrigation, domestic and stock, and power purposes being now in force.

4. **Queensland.**—The main irrigation works in Queensland are as follow:—(a) those at Ayr, which utilise the waters of the Burdekin River, and shallow wells on its banks; (b) those at Bingera, near Bundaberg, which utilise water pumped from the Burnett River just above the point of meeting of the salt and fresh waters, and (c) those at Fairymede, which utilise water pumped from a number of shallow spear wells sunk on the alluvial flats on the north side of the Burnett River and about six miles from Bundaberg. There were 596 irrigators in the State in 1912, chiefly farmers and graziers, and the area irrigated was 9420 acres.

5. **South Australia.**—(i.) *The Renmark Irrigation Trust.* The Renmark Irrigation Trust was established in 1893 on similar lines to Mildura, but on a smaller scale. At present the extent of the land assessed for the purpose of the trust is approximately 5200 acres, and maintains a population of 2500. The value of Renmark products has now reached the sum of over £130,000 per annum. It is claimed that without irrigation the land would barely feed 500 sheep.

(ii.) *Other Waterworks.* A number of country water works are under the control of the Public Works Department. As, however, they are not irrigation works properly so called, but are used for supplying water for domestic purposes, etc., to several towns, no further reference will be made to them in this chapter. (See Section XXVI., *Local Government*.)

(iii.) *Area under Irrigation.* Until 1910, irrigation in South Australia, with the exception of the schemes already mentioned, made little, if any, progress; but in that year an Irrigation and Reclamation Works Department was created, and the first report of the Director has now been issued. The Government is at present proceeding with the irrigation schemes along the Murray as fast as possible. The Cobdogla station, formerly held under grazing permits, has been resumed by the Crown, and as a result of the surveys to 30th June, 1913, 11,400 acres at Cobdogla and 3000 acres at Berri have been found available for irrigation. The area comprises practically the whole of the original Lake Bonney irrigation scheme, and is contiguous to the Berri irrigation area, which contains a further 19,000 acres of the Cobdogla run. It is proposed to start the reticulation with channels for an area of 5000 acres, between the Cobdogla homestead and Lake Barnera (formerly Lake Bonney), which lends itself to economical irrigation. A large central pumping station will be erected at the south end of the lake, and will command the whole of the irrigation area, including the 5000 acres, the maximum lift being about 90 feet. In the section dealing with Closer Settlement (page 250) the subject of irrigation areas in South Australia has already been referred to.

6. Western Australia.—A Bill for the conservation and utilisation of water for industrial irrigation and for the construction of irrigation works is now before Parliament. Preliminary surveys have been made to ascertain suitable sites for impounding water on several rivers, and the results indicate the possibilities of impounding 4,113,000,000 gallons of water, which, it is estimated, would serve 100,000 acres of irrigated land. Works have been commenced on the Harvey River, which will be the first scheme to be put into active operation.

7. Conflicting Interests.—The relative rights of the States of New South Wales, Victoria, and South Australia to the waters of the Murray River are undetermined. Territorially the south bank of the Murray was the boundary between the two former States, *i.e.*, the region of the River itself, up to the point where it enters South Australia, was wholly within New South Wales.

At the Federal conventions which preceded the establishment of the Commonwealth the South Australian representatives expressed their fear lest too much irrigation on the Murray and Darling might impair the navigability of the latter river, and the result was the insertion of a provision in the Commonwealth Constitution which reads as follows:—
"Section 100.—The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or the residents therein to the reasonable use of the waters of rivers for conservation and irrigation."

Under this section negotiations have for several years been in progress between the three interested States. In January, 1911, a conference took place in Melbourne between the Premiers of New South Wales, Victoria, and South Australia on the Murray Waters question. Briefly stated, the results of the conference were that South Australia was to be allowed to carry out storage works at Lake Victoria, New South Wales, and lock her own portion of the Murray at her own expense, but New South Wales and Victoria would not recognise the claims of navigation in any way, and would not bind themselves to deliver any quantity of water at the point of intake into South Australia. No rights to navigation were conceded by New South Wales and Victoria, and the upper portions of the river were left free for irrigation.

In 1913 the three States appointed a board of engineers to carry out investigations, with a view to ascertain means which would be conducive to a settlement of the question of the River Murray and its tributaries. The board in its report stated that it was agreed that the interests of irrigation are more important than those of navigation, and that the heavy expense of maintaining the latter is not warranted.

The following agreement was suggested for apportionment of the cost of works and of water between the three States :—

The States of New South Wales and Victoria to bear in equal shares the cost of the Cumberoona and any further storages on the streams above Albury, and, in proportion to proposed diversions, the cost of any joint works in the River Murray to raise the level for purposes of diversion.

South Australia to bear the cost of all works proposed to be constructed by her in the Lake Victoria agreement, as ratified by the State Parliament, together with all works within her own territory.

The flow of the River Murray at Albury, including the natural or regulated flow of the Mitta and Kiewa rivers, and as regulated by the Cumberoona storage, to be shared equally by New South Wales and Victoria, subject to any quantity agreed to be sent down the river for riparian use and for supply to South Australia.

New South Wales and Victoria to each have full use of her own tributaries below Albury, and to have the right to divert the flows thereof, or, alternatively, equivalent volumes from the Murray below their affluences, subject to the provision from such

tributaries, or her share of the flow at Albury, or both, of contributions towards the share allotted to South Australia, and the allowance for riparian use on the main stream from the affluence of such tributary, or from Albury to Lake Victoria.

The proportion of the contribution by New South Wales and Victoria to the share allotted to South Australia, and for riparian use in the main stream to be that which the mean natural flow of the tributaries of each State below Albury measured at the points of affluence with the Murray, with half the actual mean flow at Albury added in each case, bear to each other. In calculating the mean flow of the Darling for this purpose, a deduction is to be made to the extent of any water diverted by the State of Queensland.

The minimum quantity to be allowed to pass to South Australia in each year to be sufficient to fill Lake Victoria storage once, and, in addition, to maintain, with the aid of the water returned from Lake Victoria, a regulated supply at Lake Victoria outlet of 114,000 acre feet per month during the months August to April inclusive, and 47,000 acre feet per month for the months May to July inclusive, these being the provisions for domestic and stock supply, losses by evaporation and percolation in Lake Victoria, like losses and lockage in the river from Lake Victoria to the river mouth (but not including Lakes Alexandrina and Albert), and for irrigation in the form of a regulated supply of 67,000 acre feet per month for nine months. Provided that these allowances and the allowance to the up-stream States to be reduced *pro rata* in such abnormal seasons as those of 1902 and 1903.

Divided in accordance with this agreement the share of regulated water in each State would be approximately :—New South Wales : 1,957,000 acre feet, of which some 85,000 acre feet are now diverted for use. Victoria : 2,219,000 acre feet, of which some 600,000 acre feet are now diverted for use. South Australia : 603,000 acre feet, of which some 56,000 acre feet (plus losses in distribution) are now diverted for use.

SECTION XV.

COMMERCE.

§ 1. Introductory.

1. **Constitutional Powers of the Commonwealth in regard to Commerce.**—The powers vested in the Commonwealth Parliament by the Commonwealth Constitution Act with respect to trade and commerce will be found on page 25 (section 51 (i.) and pp. 31 to 33 (sections 86-95) of this volume.

§ 2. Commonwealth Commercial Legislation.

1. **Customs Act 1901 (No. 6 of 1901).**—"An Act relating to the Customs," assented to on the 3rd October, 1901, came into operation by proclamation on the 4th October, 1901. This provided for the establishment of the necessary administrative machinery for all matters pertaining to the customs, and prescribed, *inter alia*, the manner in which customs duties shall be computed and paid. It does not, however, determine the rates thereof.

During the interval between the inception of the Commonwealth, viz., on 1st January, 1901, and the coming into operation of the Customs Act 1901, the Customs Acts of the several States were administered by the Executive Government of the Commonwealth, under section 86 of the Constitution.

2. **Customs Tariff Act 1902 (No. 14 of 1902).**—The first Commonwealth Customs Tariff imposing uniform rates of customs duty in all the States was introduced in the House of Representatives on the 8th October, 1901. "An Act relating to Duties of Customs," assented to on the 16th September, 1902, made provision that uniform duties of customs specified in the tariff schedule should be imposed from the 8th October, 1901. From this date trade between the States became free, with, however, the exception, under section 95 of the Constitution Act, of the right of Western Australia to levy duty on the goods from other States for five years. [Repealed by the Customs Tariff Act 1908 (No. 7 of 1908).]

3. **Sea Carriage of Goods Act (No. 14 of 1904).**—"An Act relating to the Sea Carriage of Goods," assented to on the 15th December, 1904, to commence on the 1st January, 1905, defines the responsibility of shipowners, charterers, masters, or agents in regard to goods carried.

4. **Secret Commission Act 1905 (No. 10 of 1905).**—"An Act relating to Secret Commissions, Rebates, and Profits," assented to on the 16th November, 1905, provides that—"Any person who, without the full knowledge and consent of the principals directly or indirectly (a) being an agent of the principal, accepts or obtains, or agrees or offers to

accept or obtain, for any person, for himself, or for any person other than the principal; or (b) gives or agrees to give or offers to the agent of a principal, or to any person at the request of an agent of the principal, any gift or consideration as an inducement or reward for any act done or to be done, or any forbearance observed or to be observed, or any favour or disfavour shewn or to be shewn in relation to the principal's affairs or business or on the principal's behalf, or for obtaining or having obtained, or aiding or having aided to obtain for any person an agency or contract for or with the principal, shall be guilty of an indictable offence."

5. Commerce (Trade Descriptions) Act 1905 (No. 16 of 1905).—"An Act relating to Commerce with other Countries," assented to on the 8th December, 1905, and brought into operation by proclamation on the 8th June, 1906, gives power to compel the placing of a proper description on certain prescribed goods, or on packages containing the same, being imports or exports of the Commonwealth.

The operation of the Act is restricted to the following classes of goods:—(a) Articles used for food or drink by man, or used in the manufacture or preparation of articles used for food or drink by man; or (b) medicines or medicinal preparations for internal or external use; or (c) manures; or (d) apparel (including boots and shoes), and the materials from which such apparel is manufactured; or (e) jewellery; or (f) seeds and plants.

6. Australian Industries Preservation Act 1906 (No. 9 of 1906).—"An Act for the Preservation of Australian Industries and for the Repression of Destructive Monopolies," assented to 24th September, 1906, provides that any person or any corporation making or engaging or continuing in any combination "with intent to restrain trade or commerce to the detriment of the public or with intent to destroy or injure by means of unfair competition any Australian industry the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers," or any person or corporation monopolising or attempting or conspiring to monopolise any part of the trade of the Commonwealth with intent to control, to the detriment of the public, the supply or price of any service, merchandise, or commodity, is guilty of an offence. (Amended, see Acts No. 5 of 1908 and No. 26 of 1909-1910.)

7. Customs Tariff 1906 (No. 14 of 1906).—"An Act relating to Duties of Customs" amends the Customs Tariff of 1902 in relation to the duties on harvesters and agricultural implements and machinery and prescribes the prices to be the maximum prices of Australian harvesters and drills delivered to the purchaser at the railway station or port nearest to the factory where they are made. [Repealed by Customs Tariff Act 1908 (No. 7 of 1908).]

8. Customs Tariff (South African Preference) 1906 (No. 17 of 1906).—"An Act relating to Preferential Duties of Customs on certain goods the produce or manufacture of the British Colonies or Protectorates in South Africa which are included within the South African Customs Union," assented to 12th October, 1906, to operate from 1st October, 1906, provides for special preferential rates of duty on certain goods imported from and being the produce of any of the Colonies or Protectorates included within the South African Customs Union.

9. Australian Industries Preservation Act 1907 (No. 5 of 1908).—"An Act to amend the Australian Industries Preservation Act 1907," assented to 14th April, 1908, provides additional machinery for procuring evidence of offences against the principal Act.

10. Customs Tariff 1908 (No. 7 of 1908).—"An Act relating to Duties of Customs," assented to 3rd June, 1908, repeals Section 5 of the Customs Tariff 1902 (No. 14 of 1902) and the schedule of that Act and the whole of the Customs Tariff 1906 (No. 14 of 1906)

as from 8th August, 1907, and imposes new rates of Customs Duties. This Act provides preference rates of customs duties on certain "goods the produce or manufacture of the United Kingdom."

11. **Customs Tariff Amendment Act 1908 (No. 13 of 1908).**—"An Act to amend the Tariff Act of 1908," assented to 10th June, 1908. The purpose of this Act is merely to remove possible doubt as to the intention of the original Acts.

12. **Australian Industries Preservation Act 1909 (No. 26 of 1909).**—"An Act to amend the Australian Industries Preservation Acts 1906-1907" formally repeals Sections 5 and 8 of the parent Act, which were declared by the High Court to be *ultra vires*; also provides that, in relation to trade and commerce with other countries or among the States, the payment of rebates, or the refusal to sell, "either absolutely or except upon disadvantageous conditions," with the purpose of promoting exclusive dealing, shall be an offence.

13. **Customs (Interstate Accounts) Act 1910 (No. 9 of 1910).**—Repeals Sections 272 and 273 of the Customs Act 1901. These sections relate to the passing of dutiable goods from one State to another State of the Commonwealth, and their repeal was consequent on the termination of the book-keeping system of accounts between the Commonwealth Government and the Governments of the States, in favour of a system of payments based on population.

14. **Australian Industries Preservation Act 1910 (No. 29 of 1910).**—"An Act to amend the Australian Industries Preservation Act 1906-1909." This Act removes from the principal Act the obligation to prove *intent* to restrain trade and detriment to the public.

15. **Customs Act 1910 (No. 36 of 1910).**—"An Act to amend the Customs Act 1901" gives the Customs control of all goods for export, the exportation of which is subject to compliance with any condition or restriction under any Act or regulation, extends the machinery provisions for the prevention of the importation or exportation of goods which are prohibited imports or exports respectively, amends the provisions for the payment of duty under protest, gives the Governor-General power to prescribe the nature, size, and material of the coverings for packages, and the maximum or minimum weight or quantity to be contained in any one package of goods imported or exported, or transported coastwise from one State to another; the condition of preparation or manufacture for export of any articles used for, or in the manufacture of, food or drink by man; the conditions as to purity, soundness, and freedom from disease to be conformed to by the goods for export.

16. **Customs Tariff 1910 (No. 39 of 1910).**—"An Act relating to Duties of Customs," amends the Customs Tariff of 1908 by more explicit definition of certain tariff items, and by alteration of some rates of duty.

17. **Customs Tariff 1911 (No. 19 of 1911).**—"An Act relating to Duties of Customs," amends the Customs Tariff 1908-10 by alteration of some rates of duty.

18. **Interstate Commission Act 1912 (No. 33 of 1912).**—In accordance with the provisions of the Commonwealth Constitution Act—Sections 101 to 104 (see page 33 *ante*)—an Act relating to the Interstate Commission was assented to on the 24th December, 1912. This Act provides for the appointment of the Commission, and cognate matters.

§ 3. Method of Recording Imports and Exports.

1. Value of Imports.—The recorded value of goods imported from countries beyond the Commonwealth represents the amount on which duty is payable or would be payable if the duty were charged *ad valorem*. The value of goods is taken to be 10 per cent. in advance of the fair market value in the principal markets of the country whence the goods were exported, the increase being intended to represent roughly the cost plus insurance, freight and other charges to the place of landing.

2. Value of Exports.—The recorded value of goods exported is taken to represent the value in the principal markets of the Commonwealth in the ordinary commercial acceptance of the term.

3. Records of Past Years.—In the years preceding federation each State independently recorded its trade, and in so doing did not distinguish other Australian States from foreign countries. As the aggregation of the records of the several States is, necessarily, the only available means of ascertaining the trade of Australia for comparison with later years, it is unfortunate that past records of values and the direction of imports were not on uniform lines admitting of the preparation of a record for Australia as a whole. On the introduction of the Customs Act 1901, the methods of recording values were made uniform throughout the States, but it was not until September, 1903, that a fundamental defect in the system of recording transhipped goods was remedied. Up to this date goods arriving in any Australian port for transshipment to a port in another Australian State were recorded at the latter port only, where they were ordinarily recorded as from the transshipping State, and not as an import from the oversea country.

In recording exports an analogous defect also existed in most of the States, since goods despatched from one Australian State for transshipment in another State to an oversea country were simply recorded in the former as an export to the transshipping State; thus no proper record of the export oversea was made. Owing to this defect the oversea trade prior to September, 1903, is understated by an amount which it is impossible to accurately estimate, since it varies with the development of the shipping facilities of the States concerned. To discover the direction of the transhipped trade is not possible. The figures presented in the tables hereinafter are therefore the values as recorded, and must be taken as subject to the defects explained.

4. Vessels (Ships) Imported and Exported.—The imports or exports of vessels were not recorded prior to the year 1905. The value of vessels imported during each of the years 1905-1912 were as follows:—1905, £265,957; 1906, £366,300; 1907, £680,700; 1908, £700,500; 1909, £757,100; 1910, £711,850; 1911, £340,045; 1912, £1,257,655. The exports during the same years were:—1905, £79,975; 1906, £51,365; 1907, £90,201; 1908, £82,355; 1909, £38,600; 1910, £72,000; 1911, £17,605; 1912, £66,300.

5. Ships' Stores.—Prior to 1906 goods shipped in Australian ports on board oversea ships as ships' stores were included in the general exports. From 1906 ships stores have been specially recorded as such, and omitted from the return of exports. The value of ships' stores during 1906 amounted to £875,966 (of which bunker coal represented £575,471, or 65.7 per cent.), during 1907 to £998,897 (bunker coal representing £663,721, or 66.45 per cent.), during 1908 to £1,196,106 (bunker coal £867,707, or 72.55 per cent.), during 1909 to £1,071,677 (bunker coal £781,113, or 72.90 per cent.), during 1910 to £1,080,133 (bunker coal £740,567, or 68.57 per cent.), during 1911 to £1,238,446 (bunker coal £858,783, or 69.35 per cent.), and during 1912, to £1,431,985 (bunker coal £1,008,259, or 70.41 per cent.).

§ 4. Oversea Trade.

1. **Total Oversea Trade.**—The following table shews the total trade of the Commonwealth with oversea countries from the earliest date for which records are available. In consequence of the defects of record, referred to in the preceding section, the results can be only approximate to the actual figures. The very marked rise and sudden fall in the value of imports during the period 1837 to 1842 were contemporaneous with heavy land speculation and a subsequent severe financial crisis. The great increase of trade in the early fifties is due to the discovery of gold. In the State of Victoria the value of imports from oversea countries increased from £500,000 in 1851 to nearly £11,000,000 in 1853, and to £13,000,000 in 1854; while in New South Wales similar imports rose from £1,390,000 in 1851 to £5,500,000 in 1854, when the total imports into the Commonwealth reached the sum of £34 13s. 10d. per head, and the total trade £56 3s. 10d. per head of the population. The rapid influx of persons anxious to share the good fortunes of these times, however, soon reduced the value of the trade per head, till, in 1858, it had declined to £31 19s. 6d. per head. The period 1867-1872 shows a marked reduction in the value of trade per head. For some years prior to this period New South Wales had experienced a succession of indifferent seasons, and Victoria was suffering from a congested labour market consequent on the decline of alluvial gold-mining in that State. This congestion of the labour market during the years 1862 to 1866 gave rise to the agitation for a protective tariff to provide employment in manufactures, and in April, 1866, the Tariff Act, which expressed the protective policy since adhered to in Victoria, was assented to.

OVERSEA TRADE OF COMMONWEALTH, 1826 to 1913.

Year.	Recorded Value.			Value per Inhabitant. ¹			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1826	435	181	566	8 3 10	2 9 4	10 13 2	30.1
1827	478	98	576	8 13 10	1 15 8	10 9 6	20.5
1828	735	122	857	12 17 0	2 2 8	14 19 8	16.6
1829	846	218	1,064	14 2 0	3 12 8	17 14 8	25.8
1830	697	194	891	10 11 6	2 18 11	13 10 5	27.8
1831	753	412	1,165	10 6 8	5 13 0	15 19 8	54.7
1832	956	495	1,451	11 19 4	6 3 11	18 3 3	51.8
1833	1,036	500	1,536	11 7 8	5 9 11	16 17 7	48.3
1834	1,373	756	2,129	13 9 10	7 8 6	20 18 4	55.1
1835	1,600	903	2,503	14 12 6	8 5 1	22 17 7	56.4
1836	1,659	985	2,644	13 18 4	8 5 3	22 3 7	59.4
1837	1,510	967	2,477	11 12 10	7 9 1	19 1 11	64.0
1838	2,055	1,054	3,109	14 7 3	7 7 4	21 14 7	51.3
1839	2,578	1,044	3,622	16 0 8	6 9 11	22 10 7	40.5
1840	3,615	1,513	5,128	20 1 6	8 8 1	28 9 7	41.9
1841	3,145	1,335	4,480	15 6 0	6 10 0	21 16 0	42.4
1842	1,742	1,264	3,006	7 10 11	5 9 7	13 0 6	72.6
1843	1,926	1,281	3,207	7 16 7	5 4 2	13 0 9	66.5
1844	1,201	1,291	2,492	4 13 4	5 0 4	9 13 8	107.5
1845	1,518	1,721	3,239	5 11 9	6 6 8	11 18 5	113.4
1846	1,995	1,794	3,789	6 19 5	6 5 5	13 4 10	89.9
1847	2,441	2,200	4,641	8 2 3	7 6 3	15 8 6	90.1
1848	2,000	2,278	4,278	6 4 10	7 2 2	13 7 0	113.9
1849	2,451	2,359	4,810	6 18 11	6 13 9	13 12 8	96.2
1850	3,009	2,688	5,697	7 14 8	6 18 1	14 12 9	89.3
1851	2,962	2,708	5,670	7 0 7	6 8 7	13 9 2	91.4
1852	4,798	10,896	15,694	10 1 9	22 18 3	33 0 0	227.0

1. Reckoned on mean population of the year.

OVERSEA TRADE OF COMMONWEALTH, 1826 TO 1913.—Continued.

Year.	Recorded Value.			Value per Inhabitant. ¹			Percentage of Exports on Imports.
	Imports.	Exports.	Total.	Imports.	Exports.	Total.	
	£1,000.	£1,000.	£1,000.	£ s. d.	£ s. d.	£ s. d.	%
1853	14,990	14,403	29,393	26 17 11	25 16 10	52 14 9	96.1
1854	22,478	13,928	36,406	34 13 10	21 10 0	56 3 10	62.0
1855	14,428	15,134	29,562	19 7 11	20 6 11	39 14 10	105.0
1856	16,631	16,234	32,865	19 18 4	19 8 9	39 7 1	97.6
1857	18,872	16,127	34,999	20 9 0	17 9 5	37 18 5	85.5
1858	17,668	14,625	32,293	17 9 11	14 9 7	31 19 6	82.8
1859	20,376	17,027	37,403	18 19 6	15 17 1	34 16 7	83.6
1860	20,536	16,081	36,617	18 6 5	14 6 11	32 13 4	78.3
1861	17,651	17,413	35,064	15 5 2	15 1 1	30 6 3	98.7
1862	20,599	18,065	38,664	17 7 1	15 4 5	32 11 6	87.7
1863	21,248	19,336	40,584	17 4 7	15 13 7	32 18 2	91.0
1864	20,503	18,977	39,480	15 17 4	14 13 6	30 10 10	92.6
1865	20,660	19,706	40,366	15 4 4	14 10 4	29 14 8	95.4
1866	21,311	18,972	40,283	15 0 10	13 7 10	28 8 8	89.0
1867	15,964	18,384	34,348	10 18 1	12 11 2	23 9 3	115.2
1868	18,436	21,650	40,086	12 3 11	14 6 6	26 10 5	117.4
1869	19,910	20,066	39,976	12 14 4	12 16 4	25 10 8	103.8
1870	17,833	18,012	35,845	11 0 2	11 2 5	22 2 7	101.0
1871	17,017	21,725	38,742	10 3 3	12 19 6	23 2 9	127.7
1872	18,833	22,518	41,351	10 18 9	13 1 7	24 0 4	119.6
1873	24,567	26,370	50,937	13 17 10	14 18 2	28 16 0	107.4
1874	24,554	25,646	50,200	13 9 9	14 1 8	27 11 5	104.5
1875	24,939	24,978	49,917	13 6 2	13 6 7	26 12 9	100.1
1876	23,963	23,540	47,503	12 8 7	12 4 2	24 12 9	98.2
1877	25,797	23,107	48,904	12 18 8	11 11 8	24 10 4	89.6
1878	26,181	23,773	49,954	12 14 0	11 10 8	24 4 8	90.8
1879	24,233	21,184	45,417	11 7 10	9 19 2	21 7 0	87.4
1880	22,939	27,255	50,194	10 8 10	12 8 1	22 16 11	118.8
1881	29,067	27,528	56,595	12 16 2	12 2 8	24 18 10	94.7
1882	36,103	27,313	63,416	15 7 7	11 12 9	27 0 4	75.6
1883	35,454	30,058	65,512	14 9 9	12 5 8	26 15 5	84.8
1884	36,988	28,708	65,696	14 9 6	11 4 8	25 14 2	77.6
1885	36,862	26,667	63,529	13 18 2	10 1 3	23 19 5	72.3
1886	34,179	21,700	55,879	12 9 4	7 18 4	20 7 8	63.5
1887	29,572	23,421	52,993	10 8 8	8 5 3	18 13 11	79.2
1888	36,881	28,900	65,781	12 11 7	9 17 2	22 8 9	78.4
1889	37,577	29,553	67,130	12 8 8	9 15 7	22 4 3	78.6
1890	35,168	29,321	64,489	11 6 4	9 8 9	20 15 1	83.4
1891	37,711	36,043	73,754	11 16 0	11 5 6	23 1 6	95.6
1892	30,107	33,370	63,477	9 4 0	10 3 10	19 7 10	110.8
1893	23,765	33,225	56,990	7 2 7	9 19 4	17 1 11	139.8
1894	21,897	32,131	54,028	6 9 0	9 9 4	15 18 4	146.7
1895	23,195	33,644	56,839	6 14 1	9 14 6	16 8 7	145.0
1896	29,658	32,964	62,622	8 8 5	9 7 2	17 15 7	111.1
1897	31,958	37,783	69,741	8 18 3	10 10 9	19 9 0	118.2
1898	31,481	40,165	71,646	8 12 11	11 0 7	19 13 6	127.6
1899	34,330	48,599	82,929	9 6 0	13 3 5	22 9 5	141.6
1900	41,388	45,957	87,345	11 1 3	12 5 9	23 7 0	111.0
1901	42,434	49,696	92,130	11 3 11	13 2 2	24 6 1	117.1
1902	40,676	43,915	84,591	10 11 4	11 8 3	21 19 7	108.0
1903	37,811	48,250	86,061	9 14 3	12 7 10	22 2 1	127.6
1904	37,021	57,486	94,507	9 7 9	14 11 7	23 19 4	155.3
1905	38,347	56,841	95,188	9 11 9	14 4 1	23 15 10	148.2
1906	44,745	69,738	114,483	11 0 4	17 3 6	28 3 10	155.9
1907	51,809	72,824	124,633	12 11 3	17 13 2	30 4 5	140.6
1908	49,799	64,311	114,110	11 17 5	15 6 8	27 4 1	129.1
1909	51,172	65,319	116,491	11 19 5	15 5 7	27 5 0	127.6
1910	60,014	74,491	134,505	13 14 8	17 0 10	30 15 6	124.1
1911	66,968	79,482	146,450	14 18 3	17 14 0	32 12 3	118.7
1912	78,159	79,096	157,255	16 16 7	17 0 7	33 17 2	101.2
1913 ²	79,712	78,501	158,213	16 12 0	15 12 10	32 4 10	98.5

1. Reckoned on mean population of the year. 2. Preliminary figures.

The graphs illustrating the movement of the oversea trade of Australia (see pages 523 and 524) shew that periods of depressed trade have been recurrent at more or less regular intervals of from seven to nine years, and measured by population, each succeeding depression since 1855 has carried the trade per head lower than the preceding one, until the lowest point was reached in 1894.

The year 1892 marked the beginning of a period of acute financial stress, culminating in the commercial crisis of 1893. The collapse of these years is plainly reflected in the trade records of that period, the trade of 1894 falling to £54,028,227, a decline of no less than 26.75 per cent. in three years. In 1895 there was a slight recovery, and a continuous upward movement until 1901, when the trade reached £92,130,183, or £24 6s. 1d. per head. A decline, due to drought, in the exports of agricultural, pastoral, and dairy produce, reduced the trade of 1902 to £84,591,037, but although in the next year there was a further shrinkage in the exports of agricultural produce, the increase in the value of the exports of metals, specie, butter, and wool was so large as to effect an increase in the total trade. From 1902 the increase in the value of trade continued, till in 1907 it reached the amount of £124,633,280, equal to £30 4s. 5d. per inhabitant.

The imports during 1907 were, doubtless, to some extent inflated by the importation of goods in anticipation of the tariff revision of that year. The trade of 1908 shews a decline of £10,523,000 as compared with 1907, of which £8,513,000 was in the value of exports, notwithstanding an increase of £3,447,767 in the export of gold and specie. This decline in the value of exports was largely due to reduced prices ruling for wool and metals in consequence of the financial crisis in the United States during the previous year, and in lesser degree to the smaller exports of agricultural and pastoral produce, due to the unfavourable season experienced in some of the States.

The trade of 1909 per head of population was slightly more than in 1908, notwithstanding that the gold exports were less by £5,193,587. In 1910 the value of imports per head was higher than in any year since 1885, and the value of exports was—excepting the years 1906 and 1907—the highest since 1857. The high value of exports is particularly striking when considered in conjunction with the exceptionally small exports of gold. The exports of gold, already much reduced in 1909 as compared with 1908, were in 1910 still further reduced by £4,264,363 to £4,108,783, the smallest recorded since 1892. During 1911 the exports of gold bullion and specie again increased to £11,540,782. The continued increase in the value of imports during 1912 and 1913, while the value of exports remained stationary, is referred to in the succeeding paragraph. The particular classes of goods from which the increases in trade arise are shewn on pages 639 to 641.

2. Ratio between Exports and Imports.—The foregoing table shews the percentage of exports on imports for each year. From this it will be seen that, with few exceptions, due to temporary dislocations of trade, prior to 1892 the balance of trade has been on the side of imports, but from 1891 to 1912 the reverse has been the case. The excess of imports in the earlier years represents the introduction of capital in the form of Government loans and for investment in private undertakings, and the excess of exports represents mainly the interest and profit on the earlier investments, repayment of loans to foreign bondholders, and also freight on trade, which is carried mainly by ships of the United Kingdom and foreign countries.

The marked change in the balance of trade, which is in the direction of that of twenty years ago, is a striking feature of the trade returns for 1912. The decline in the ratio of exports to imports has been due, mainly, to the loans recently raised in London by the Governments of the various States of the Commonwealth. The proceeds of these loans, of course, swell the import returns, but, as no immediate payment beyond an instalment of interest has to be made in return, the export figures are affected to a very minor degree, until such time as the principal of the debt is repaid. The larger number of immigrants has, also, to some extent affected the balance of trade by the introduction of capital. The following table shews for the last twelve years the balance of trade of

the Commonwealth as shewn by the records of imports and exports for each year, and, also, the modification of these figures as affected by loans raised in London by the States:—

EFFECT OF LOANS ON THE RECORDED BALANCE OF TRADE.

Year.	Excess of Exports as Recorded.		Net Amount of Debt Raised or Redeemed (—) in London.	Excess of Exports Modified by Elimination of Loans.	
	Amount.	Per cent.	Amount.	Amount.	Per cent.
	£1,000.		£1,000.	£1,000.	
1902	3,239	100	5,014	8,253	100
1903	10,439	322	1,658	12,097	146
1904	20,465	632	753	21,218	257
1905	18,494	571	1,968	20,462	248
1906	24,993	771	5,308	19,685	238
1907	21,015	649	2,259	18,756	227
1908	14,512	448	6,088	20,600	249
1909	14,147	436	2,562	16,709	202
1910	14,477	447	2,904	11,573	140
1911	12,518	386	3,123	15,641	189
1912	937	29	12,327	13,264	161
1913	1,211	137	5,590*	4,379	...

* June to December, 1913.

The trade balances would be further modified by the loans of local governing bodies, by the imports of capital for private enterprises, and by the addition to or absorption of bank balances held in London on Australian account. Particulars of such transactions are not available. In regard to the importation of private capital, it may not be without significance that the tariff of 1908 was followed by a pronounced diminution in the excess of exports, the suggestion being that industrial enterprise had been augmented by imported capital.

The general relationship between the balance of trade of the Commonwealth and the borrowing of money abroad is demonstrated by the following figures:—

BALANCE OF TRADE AND PUBLIC DEBT.

					Annual Average.				
Period.					Imports.	Exports.	Excess of		New Debt.
							Imports.	Exports.	
					Mill. £.	Mill. £.	Mill. £.	Mill. £.	Mill. £.
1867-1871	...	...	...	...	17.8	20.0	...	2.2	1.7
1872-1876	...	...	...	...	23.4	24.6	...	1.2	2.6
1877-1881	...	...	...	...	25.6	24.6	1.0	...	5.2
1882-1886	...	...	...	...	35.8	26.8	9.0	...	10.6
1887-1891	...	...	...	...	35.4	29.4	6.0	...	7.4
1892-1896	...	...	...	...	25.6	33.0	...	7.4	3.8
1897-1901	...	...	...	...	36.2	44.4	...	8.2	3.2
1902-1906	...	...	...	...	39.6	55.2	...	15.6	0.8
1907-1911	...	...	...	...	56.0	71.2	...	15.2	1.3
1912-1913	...	...	...	...	79.0	79.0	...	...	12.0

* Subsequent to 1897 these figures relate to moneys raised outside of Australia only. Prior to 1893 the amounts raised locally were insignificant, but it is probable that the amount of new debt raised during 1892-5 is somewhat overstated.

§ 5. Direction of Trade.

1. **Country of Shipment and Country of Origin.**—The following table shews, for the years 1908 and 1912, the value of imports recorded as direct from the principal countries, and also the disposition of the value of imports against the countries where they were produced or manufactured. A similar comparison for the years 1905-11 will be found in previous issues of this work.

COMMONWEALTH IMPORTS FROM COUNTRIES OF SHIPMENT AND COUNTRIES OF ORIGIN, 1908 and 1912.

Country.	Imports according to—							
	Country of Shipment.				Country of Origin.			
	1908.		1912.		1908.		1912.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
United Kingdom ...	£ 29,930,157	60.10	£ 45,925,156	58.76	£ 25,274,661	50.75	£ 39,124,829	50.06
BRITISH POSSESSIONS—								
Canada ...	321,041	0.64	1,084,023	1.38	532,752	1.07	977,075	1.25
Ceylon ...	689,813	1.37	863,788	1.11	681,950	1.37	849,588	1.09
Hong Kong ...	247,689	0.50	331,007	0.42	7,321	0.01	4,629	0.01
India ...	1,630,246	3.28	2,106,337	2.70	1,655,140	3.33	2,282,047	2.92
New Zealand ...	2,276,597	4.57	3,352,444	4.29	2,196,433	4.41	2,979,628	3.81
Straits Settlements ...	384,567	0.77	690,575	0.88	158,603	0.32	174,911	0.22
Other British Possessions ...	845,671	1.70	1,152,732	1.48	994,755	2.00	1,384,896	1.77
Total British Possessions ...	6,389,624	12.83	9,581,206	12.26	6,229,954	12.51	8,652,774	11.07
Total British Countries ...	36,319,781	72.93	55,506,362	71.02	31,504,615	63.26	47,777,603	61.13
FOREIGN COUNTRIES—								
Austria-Hungary ...	16,947	0.03	71,967	0.09	265,345	0.53	381,956	0.49
Belgium ...	970,187	1.95	2,146,487	2.75	636,450	1.28	1,192,084	1.53
China ...	69,362	0.14	102,266	0.13	315,887	0.63	459,402	0.59
France ...	479,642	0.97	574,381	0.73	1,775,889	3.56	2,283,293	2.93
Germany ...	3,509,120	7.05	5,144,613	6.58	4,482,394	9.00	7,153,609	9.15
Japan ...	543,789	1.09	950,298	1.22	574,906	1.15	993,633	1.27
Netherlands ...	173,528	0.35	258,505	0.33	311,832	0.63	438,969	0.56
Norway ...	314,685	0.63	600,479	0.77	420,470	0.85	771,351	0.99
Spain ...	12,131	0.02	34,678	0.04	108,104	0.22	127,233	0.16
Sweden ...	206,614	0.41	602,563	0.77	348,666	0.70	714,574	0.91
Switzerland ...	38,498	0.08	44,307	0.06	754,110	1.51	1,340,287	1.72
United States ...	6,039,753	12.13	9,449,553	12.09	6,581,846	13.22	10,764,257	13.77
Other Foreign Countries ...	1,105,236	2.22	2,672,141	3.42	1,719,259	3.46	3,750,449	4.80
Total Foreign Countries ...	13,479,492	27.07	22,652,238	28.98	18,294,658	36.74	30,380,997	38.87
Total Imports from all Countries ...	49,799,273	100	78,158,600	100	49,799,273	100	78,158,600	100

The only country from which the value of direct imports exceeds by any large amount the value of the imports of goods which were manufactured or produced therein, that is to say, the only country which shews a balance of any magnitude as a distributor of the goods of other countries to Australia, is the United Kingdom. The records of our imports therefrom during the year 1912 shew that while the total direct imports from that country amounted to £45,925,156, the value of the manufactures or produce of the United Kingdom itself, imported from all countries whatsoever during the same year, was £39,124,829. From the foregoing figures it appears that goods to the value of at least £6,800,327 were received from other countries through the United Kingdom.

Other countries which shew balances as distributors to Australia, though absolutely of much less amount, are Belgium, Hong Kong, New Zealand, Straits Settlements, and Ceylon. The countries mentioned are, of course, not the only countries through which goods are indirectly imported into Australia, for the direct imports from other countries, notably France and Germany, include considerable values which are not of the

produce of those countries. These values, however, are more than balanced by value of French and German goods received through the United Kingdom and other countries.

2. **Direct Imports according to Country of Shipment.**—The following table, shewing the average yearly value of imports from each of the principal countries during each succeeding quinquennial period from 1892 to 1911, and for the year 1912, shews considerable change in direction of imports during the past twenty years. The countries mentioned in this table are those where the goods were shipped or whence they were directly consigned to Australia.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1892 to 1912.

Country.	Yearly Average of Quinquennial Periods.				Year 1912.
	1892-6.	1897-1901.	1902-6.	1907-11.	
	£	£	£	£	£
United Kingdom ...	18,241,366	22,794,700	23,163,660	33,830,777	45,925,156
British Possessions—					
Canada ...	89,861	230,460	291,253	550,005	1,084,023
Ceylon ...	239,774	410,057	603,660	731,614	863,788
Fiji ...	92,125	104,459	79,820	262,592	351,873
Hong Kong ...	460,883	313,578	303,322	259,500	331,007
India ...	606,183	924,316	1,179,309	2,081,511	2,106,337
Mauritius ...	178,074	175,966	104,911	37,051	115,674
New Zealand ...	1,100,533	1,541,123	2,479,298	2,447,039	3,352,444
Papua ...	16,623	52,416	67,987	70,444	77,399
South African Union ...	16,019	3,972	9,528	96,208	295,354
Straits Settlements ...	138,057	281,023	178,658	482,193	690,875
Other British Possessions	15,716	24,791	106,035	272,691	312,432
Total British Possessions ...	2,953,848	4,062,166	5,403,781	7,290,848	9,581,206
Total British Countries ...	21,195,214	26,856,866	28,567,441	41,121,625	55,506,362
Foreign Countries—					
Argentine Republic ...	101	3,264	229,872	21	4
Belgium ...	274,559	394,094	559,880	1,237,894	2,146,487
Chile and Peru ...	2,510	32,129	16,112	27,954	43,336
China ...	327,120	262,195	135,219	75,354	102,266
France ...	201,284	476,756	465,330	498,354	574,381
Germany ...	1,107,496	2,254,746	2,703,806	3,721,467	5,144,613
Hawaiian Islands, New Britain, New Caledonia, New Hebrides, and South Sea Islands ...	78,285	150,508	140,295	210,349	203,406
Italy ...	67,673	137,852	168,221	260,741	439,364
Japan ...	63,195	225,086	380,388	647,566	950,298
Java ...	464,351	461,748	510,689	535,762	1,387,061
Netherlands ...	12,125	36,919	101,531	192,038	258,505
Norway ...	154,277	284,024	303,446	458,649	600,479
Philippine Islands ...	15,869	69,385	70,668	96,746	136,197
Sweden ...	21,872	97,189	69,827	316,771	602,563
United States of America	1,682,092	4,355,724	5,014,408	6,230,960	9,449,553
Other Foreign Countries	56,544	219,715	282,848	320,156	613,725
Total Foreign Countries ...	4,529,353	9,461,334	11,152,540	14,830,783	22,652,238
Total ...	25,724,567	36,318,200	39,719,981	55,952,408	78,158,600

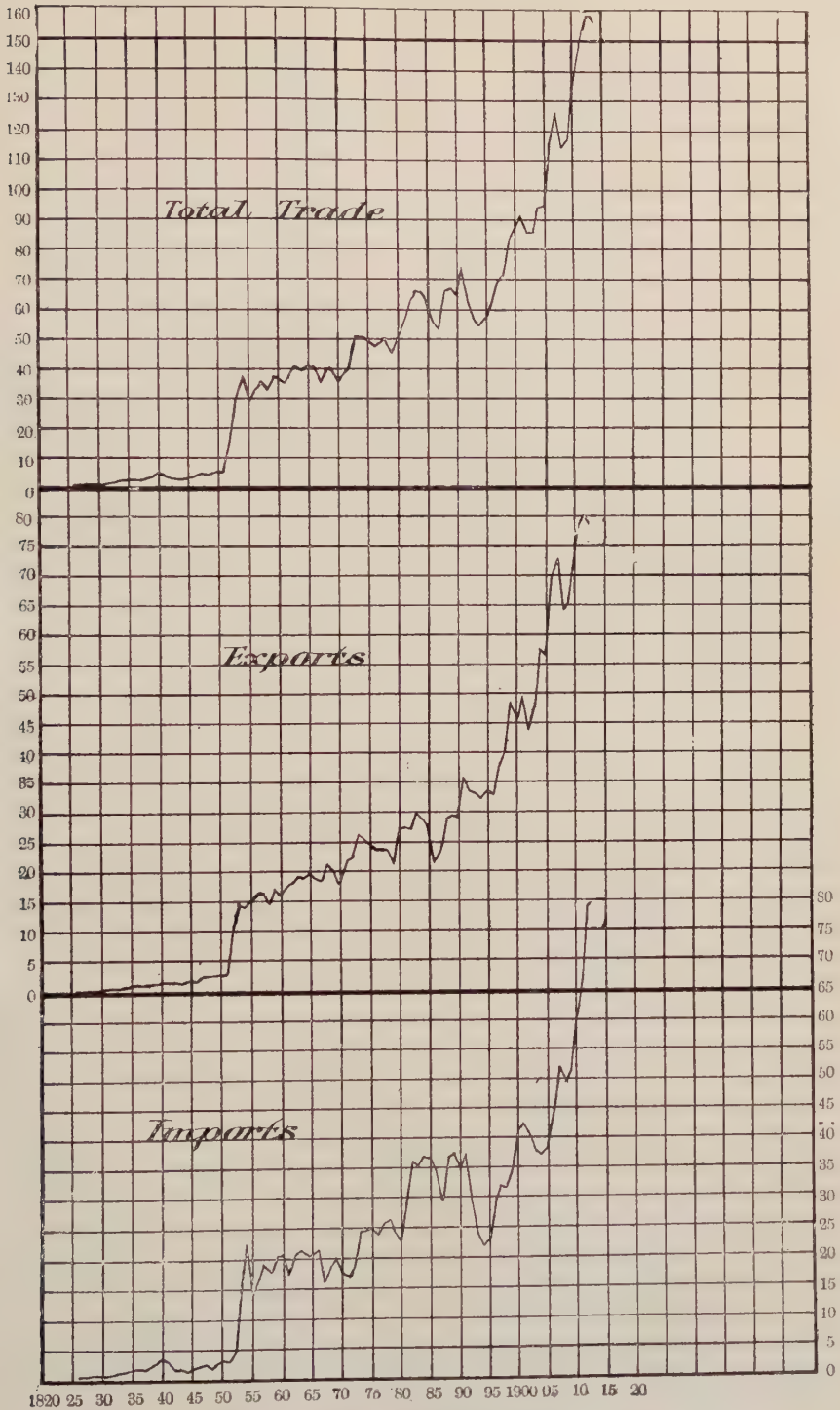
Expressing each item as percentage on the total of the imports, the following results are obtained :—

COMMONWEALTH IMPORTS.—PERCENTAGES OF THE IMPORTS FROM EACH COUNTRY ON THE TOTAL IMPORTS, 1892 to 1912.

Country.	1892-6.	1897-1901.	1902-6.	1907-11.	1912.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom	70.91	62.76	58.32	60.46	58.76
BRITISH POSSESSIONS—					
Canada	0.34	0.65	0.73	0.98	1.38
Ceylon	0.93	1.13	1.52	1.32	1.11
Fiji	0.36	0.29	0.20	0.47	0.45
Hong Kong	1.80	0.86	0.76	0.46	0.42
India	2.36	2.54	2.97	3.73	2.70
Mauritius	0.69	0.48	0.26	0.06	0.15
New Zealand	4.29	4.24	6.24	4.37	4.29
Papua	0.06	0.14	0.17	0.12	0.10
South African Union	0.06	0.01	0.02	0.18	0.38
Straits Settlements	0.53	0.77	0.45	0.86	0.88
Other British Possessions	0.06	0.07	0.28	0.49	0.40
Total British Possessions	11.48	11.18	13.60	13.04	12.26
Total British Countries	82.39	73.94	71.92	73.50	71.02
FOREIGN COUNTRIES—					
Argentine Republic	0.00	0.00	0.58	0.00	0.00
Belgium	1.07	1.03	1.40	2.21	2.75
Chile and Peru	0.01	0.09	0.04	0.05	0.06
China	1.27	0.72	0.34	0.13	0.13
France	0.78	1.32	1.17	0.89	0.73
Germany	4.31	6.22	6.80	6.65	6.58
Hawaiian Islands, New Britain, New Caledonia, New Hebrides and South Sea Islands	0.31	0.42	0.35	0.38	0.26
Italy	0.26	0.38	0.42	0.47	0.56
Japan	0.24	0.62	0.96	1.16	1.22
Java	1.81	1.27	1.29	0.96	1.77
Netherlands	0.05	0.10	0.26	0.34	0.39
Norway	0.61	0.78	0.76	0.82	0.77
Philippine Islands	0.06	0.19	0.18	0.17	0.17
Sweden	0.08	0.27	0.18	0.56	0.77
United States of America	6.54	11.98	12.62	11.13	12.09
Other Foreign Countries	0.21	0.62	0.73	0.58	0.79
Total Foreign Countries... ..	17.61	26.06	28.08	26.50	28.98
Total	100	100	100	100	100

3. Imports from the United Kingdom.—The foregoing tables shew that while the actual value of direct imports from the United Kingdom during 1912 is above the yearly average of the period under review, being double that of the quinquennium 1897-1901, and nearly double that of the quinquennium 1902-6, the proportion to total imports has diminished, having fallen from 70.91 per cent. during the years 1892-6 to 58.76 per cent.

GRAPHS SHEWING VALUES OF TOTAL TRADE, EXPORTS, AND IMPORTS OF
COMMONWEALTH, 1826 to 1913.

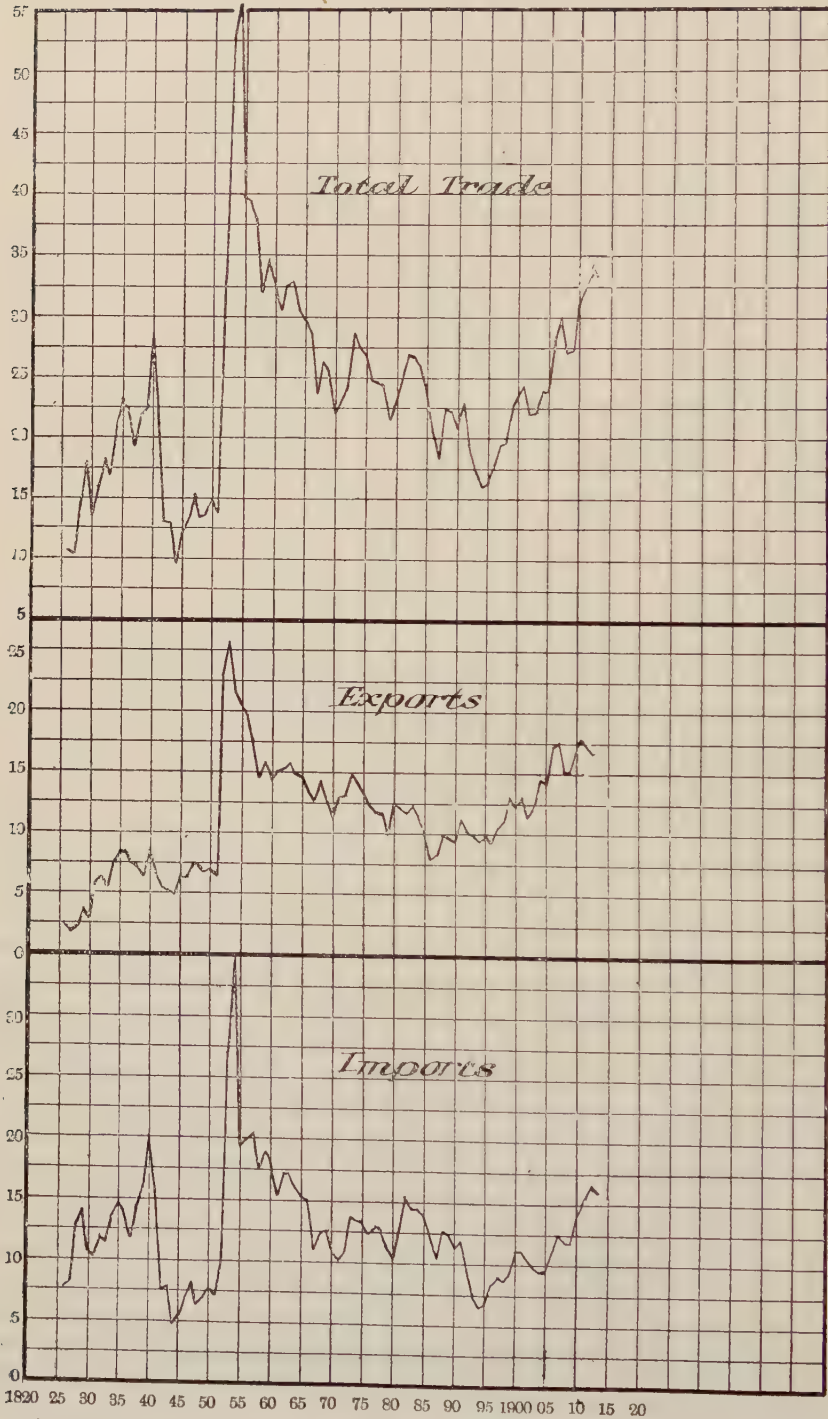


(See pages 516 and 517.)

EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height five million pounds sterling for Imports and Exports, and ten million pounds sterling for Total Trade. The scales for Total Trade and Exports are on the left and that for Imports on the right hand side of the graphs.

GRAPHS SHEWING THE VALUES PER HEAD OF POPULATION OF TOTAL TRADE,
EXPORTS AND IMPORTS OF COMMONWEALTH, 1826 to 1913.

(See pages 516 and 517.)



EXPLANATION OF GRAPHS.—The base of each square represents an interval of five years, and the vertical height fifty shillings per head of the population. The basic lines of Imports and Exports are nil per head, and that of Total Trade is five pounds sterling per head.

in 1912. The position of the United Kingdom as indicated by her percentage proportion of the total trade is largely affected by the imports of vegetable foodstuffs, a branch of trade in which the United Kingdom cannot participate. The apparent diversion of Australian trade from Great Britain is more fully dealt with in sub-section 11 of this chapter. The values of the principal imports of United Kingdom origin during the year 1912 are as follows:—

Ale and beer, £481,336; apparel and textiles—apparel, £3,236,644, textiles, £9,001,302; arms, ammunition and explosives, £712,456; books and periodicals, £613,976; brushware, £84,996; earthenware, etc., £318,056; clocks and watches, £43,616; cocoa and chocolate, £141,340; confectionery, £330,121; cordage, metal, £120,403; cordage, other, £151,783; cutlery, £273,928; drugs and chemicals—alkalies (soda), £117,444, fertilisers, £52,756, medicines, £181,778, other drugs and chemicals, £577,164; electrical and gas appliances, £268,744; electrical materials, £587,433; fancy goods, £244,082; fish, fresh and preserved, £201,364; furniture, £130,324; glass and glassware, £177,452; indiarubber and manufactures, £260,914; instruments, musical, £102,312; instruments, scientific, surgical, etc., £100,571; iron and steel—pig iron, £193,486, bar, hoop, ingot, etc., £837,729, scrap, £74,277, girders, beams, etc., £226,190, plate and sheet, galvanised or corrugated, £1,905,802, not galvanised or corrugated, £245,889, pipes and tubes, £630,513, rails, fishplates, etc., £344,733, tinne plates, plain, £504,257; wire, £125,800; wire netting, £229,575; jewellery and precious stones, £260,952; leather and leather manufactures, £138,485; machines and machinery, £2,510,052; metals, manufactures of, £2,655,430; milk, preserved, £11,495; oils (not essential), £335,667; paints and colours, £456,703; paper, £834,431; pickles, sauces, etc., £156,020; soap, £53,001; specie, £531,878; spirits, £836,621; stationery, £299,931; tobacco, £70,672; tools of trade, £342,179; varnishes, £91,945; vehicles—bicycles, etc., £191,263, motors, £727,371, other vehicles, £157,583; vessels (ships), £1,165,750; yarns, £332,717.

4. **Imports Shipped from British Possessions.**—The growth of the value of imports from other British possessions during the past twenty years has been such as to increase the proportion to total imports from 11.48 per cent. in the years 1892-6 to 12.26 per cent. in 1912 the actual values being respectively £2,953,848 and £9,581,206. Of the total imports from British possessions during 1912, 34.99 per cent., or 4.29 per cent. of all imports, was from New Zealand; 21.98 per cent., or 2.17 per cent. of all imports, from India; 11.31 per cent., or 1.38 per cent. of all imports from Canada; and 9.02 per cent., or 1.11 per cent. of all imports, from Ceylon.

5. **Principal Imports, the Produce of British Possessions, 1912.**—These are as follows:—

(i.) *Canada.* Apparel and textiles, £16,546; boots and shoes, £8881; drugs and chemicals, £21,209; fish, £77,340; furniture, £23,644; indiarubber and manufactures, £27,931; agricultural implements and machinery, £250,699; other machines and machinery, £15,732; metal manufactures, £12,569; paper, £185,781; timber, £70,922; motor chassis, £135,800, motor bodies, £27,135, other vehicles, £25,040.

(ii.) *Ceylon.* Coir fibre, £3428; nuts, £27,446; rubber and manufactures, £63,147; tea, £734,116. The large increase in the imports from Ceylon—from £217,138 during the years 1891-5, to £849,588 in 1912—is due to the displacement of China teas in the Australian markets by those of India and Ceylon. Of the total imports of tea during the year 1912, 52.80 per cent. was the produce of Ceylon.

(iii.) *Fiji.* Bananas, £154,509; copra, £40,973; sugar—produce of cane, £84,379, molasses, £9237.

(iv.) *India.* Bags and sacks, £1,003,955; hessians, £215,369; cameos, precious stones, unset, £56,186; carpets, mats, etc., £25,308; coffee and chicory, £47,567; cotton, raw, £11,680; other unmanufactured fibres, £16,708; iron pig, £28,311; linseed, £19,336; rice, £273,411; shellac, £9174; oils—castor, £49,753, linseed, £4473; skins and hides, £32,379; spices, £16,770; tea, £337,665; timber, £20,847; wax, paraffin, £28,289; yarns, £13,237.

(v.) *Mauritius*. Sugar, £115,449.

(vi.) *New Zealand*. Apparel and textiles, £15,066; animals—horses, £122,378, sheep, £10,220; military stores, £8391; fibre, flax, and hemp, £60,647; fish, £44,567; gold, bullion and ore, £1,086,355; grain, barley, £53,067; hops, £13,896; implements and machinery (agricultural), £9112; machines and machinery, £7097; meats, £31,807; seeds, £55,097; skins and hides, £95,863; timber, £657,017; wool, £5204.

(vii.) *Papua*. Gold bullion and ore, £56,177.

(viii.) *South African Union*. Bark, tanning, £50,918; explosives, £19,508; precious stones, £190,637.

(ix.) *Straits Settlements*. Spices, £19,599; sago and tapioca, £70,014; canes and rattans, etc., unmanufactured, £9224; rubber, and rubber manufactures, £21,673.

6. Imports Shipped from Foreign Countries.—The imports direct from foreign countries during the year 1912 represented 28.98 per cent. of the total imports, as compared with 17.61 per cent. during the years 1892-6. Of the total imports into Australia shipped from foreign countries 22.71 per cent.—6.58 per cent. of all imports—was from Germany, and 41.71 per cent.—12.09 per cent. of all imports—was from the United States.

7. Principal Imports the Produce of Foreign Countries, 1912.—The details are as follow :—

(i.) *Austria-Hungary*. Apparel and textiles, £140,861; furniture, £35,680; china-ware, £14,661; glassware, £12,718; fancy goods, £16,132; jewellery and precious stones, £18,922; paper and stationery, £21,428; pipes, smoking, etc., £15,837.

(ii.) *Belgium*. Apparel, £110,405; textiles, £144,292; candles, £1248; cement, £25,879; drugs, chemicals, and fertilisers, £7803; glass and glassware, £181,579; iron and steel—partly manufactured, £127,821, girders, beams, etc., £6506, pipes and tubes, £11,392, plate and sheet, £35,021, railway iron, £125,033, wire, £3464; jewellery, £31,313; machines and machinery, £13,935; matches and vestas, £19,712; metal manufactures, £103,540; motors and parts, £74,264; paper, £35,711, zinc manufactures, £16,243.

(iii.) *Chile*. Barley, £28,022; soda nitrate, £32,448.

(iv.) *China*. Apparel and textiles, £133,854; cotton, raw, £13,357; fish, £15,711; fruit, £9683; ginger, £14,626; rice, £62,133; nuts, £19,141; oils, £14,673; tea, £85,592.

The decline of the value of imports from China during the past twenty years is due to the loss of the tea trade, which now draws its supplies mainly from India and Ceylon.

(v.) *France*. Apparel and textiles, £932,607; cream of tartar, £182,917; other drugs and chemicals, £40,287, fruits, £13,495; fancy goods, £60,340; jewellery, £17,857; time-pieces, £8019; pipes, smoking, etc., £77,560; motor vehicles and parts, £235,525; perfumery, £29,154; resin, £19,287; rubber manufactures, £53,652; leather, £17,936; spirits, £151,349; tiles, £11,428; wine, £138,810; machinery and manufactures of metal, £67,850.

(vi.) *Germany*. Ale and beer, £125,552; apparel and textiles, £1,915,135; arms, ammunition and explosives, £76,679; brushware, £31,750; cement, £144,564; chinaware, etc., £66,072, earthenware, £28,573; drugs and chemicals—calcium carbide, £6488, dyes, £20,243; fertilisers, £51,339, other drugs, etc., £157,833; fancy goods, £151,977; furniture, £17,312; minor articles for furniture, £5496; glass and glassware, £138,759; hops, £14,427; indiarubber manufactures, £222,042; metals and manufactures of metals—iron and steel—bar, hoop, ingot, etc., £206,478, plate and sheet, £70,402, pipes and tubes, £81,210, railway iron, £89,739, tools of trade, £37,874; wire, £340,936; wire netting, £174,534; machines and machinery, £231,253; lamps and lampware, £49,486; electrical and gas appliances, £60,922; other manufactures of metals, £621,698; jewellery, cameos, etc., £102,857; leather and leather manufactures (excluding boots and shoes), £84,255;

musical instruments, £504,666; paper, £198,452; spirits, £28,012; stationery, £94,781; tobacco, £13,239; paints and varnishes, £22,032.

(vii.) *Italy*. Apparel and textiles, £191,576; fruits, £29,276; matches and vestas, £22,783; marble and stone, £40,549; oils, olive, £13,792, essential, £17,715; nuts, £18,742; sulphur, £68,479; motors and parts, £88,639.

(viii.) *Japan*. Apparel and textiles, £484,449; bags, baskets, etc., £36,491; china-ware and earthenware, £17,916; fancy goods, £15,000; fertilisers (superphosphates), £90,221; furniture, £15,934; rice, £11,401; oils and waxes, £60,045; spices, £6898; sulphur, £37,666; timber, etc., £76,278.

(ix.) *Java*. Cotton, raw, £5100; hats and caps, £2370; rice, £10,744; kapok, £130,704; rubber, £1435; sugar, £988,049; tobacco, £2260; tea, £162,604.

(x.) *Netherlands*. Apparel and textiles, £54,820; cocoa and chocolate, £72,710; cameos and precious stones, £6384; metal manufactures, £21,005; paper, £41,799; spirits, £143,740.

(xi.) *Norway*. Calcium carbide, £72,273; fish, £124,928; milk, preserved, £7902; paper, £135,174; timber, £374,283.

(xii.) *Philippine Islands*. Flax and hemp, £93,374; cigars, £47,119.

(xiii.) *Russia*. Flax, £5374; oils, £19,995; timber, £87,624.

(xiv.) *Sweden*. Calcium carbide, £48,922; earthenware, glassware, etc., £7355; electrical machinery and fittings, £7128; cream separators, £57,343; matches and vestas, £22,489; paper, £228,588; telephones, £44,416; timber, £233,997.

(xv.) *Switzerland*. Apparel and textiles, £865,265; cigars, £14,617; cocoa and chocolate, manufactured, £135,140; confectionery, £103,215; milk, £6464; watches, £129,833.

(xvi.) *United States of America*. Apparel and textiles—Boots and shoes, £138,915; other apparel, £200,695; textiles, £272,973; arms, £58,410; ammunition and explosives, £63,184; cameras, magic lanterns, phonographs, etc., £72,377; clocks and watches, £106,836; fancy goods, &c., £118,754; fish, £242,028; furniture, £121,650; glass and glassware, £43,981; glucose, £42,485; indiarubber manufactures, £113,484; leather, £359,895; meats, £93,037; medicines, £91,045; metal manufactures—iron and steel: bars, ingots, hoops, etc., £72,528, girders, beams, etc., £30,386, pipes and tubes, £145,572, plate and sheet, £235,459, railway iron, £214,852; tools of trade, £304,893; wire, £352,335; machines and machinery, agricultural, £192,335; other machines and machinery, £1,315,327; other metal manufactures, £549,800; musical instruments, £57,058; oils, fats and waxes—benzine and gasoline, £225,295; kerosene, £610,262, lubricating oils and greases, £187,051, paraffin wax, £25,471, turpentine, £66,772; paints and varnishes, £96,825; paper, £260,277; resin, £63,221; soap, £68,267; stationery, £106,987; surgical and dental instruments, £56,875; timber, £1,314,321; tobacco, cigars, etc., £759,213; wood manufactures, £114,226; vehicles, motors and parts, £427,846; other vehicles and parts, £164,986.

8. *Direction of Exports*.—The following table shews the average yearly value of exports to principal countries during each quinquennial period from 1892 to 1911 and for the year 1912. As in the case of the import trade, considerable alteration in the direction of exports is evident. The largest increases in exports to British possessions are shewn to the South African Union and to India and Ceylon. During the South African war large shipments of gold were sent from the Commonwealth to that country, and the decline in the value of the exports to South Africa is due to the cessation of these shipments together with a decline in the exports of timber. The exports to India and Ceylon are also mainly of gold, of which exceptionally heavy shipments were made during 1904, 1911 and 1912. The large increase in the case of Belgium, Germany, and France is not entirely due to increased purchases by those countries of

Australian goods, but is due in some measure to the larger quantities of wool, skins, etc., shipped direct to the Continent, instead of, as formerly, reaching the Continent through London. The figures given below, however, do not, even now, denote the total purchases by European countries of Australian produce, as large quantities are still distributed from London.

TRADE OF THE COMMONWEALTH WITH VARIOUS COUNTRIES, 1892 to 1912.

EXPORTS (INCLUDING BULLION AND SPECIE).

Country.	Yearly Average of Quinquennial Periods.				Year 1912.
	1892-6.	1897-1901.	1902-6.	1907-11.	
	£	£	£	£	£
United Kingdom ...	23,030,779	25,337,456	25,461,689	33,475,363	31,459,317
British Possessions—					
Canada ...	12,793	77,627	172,757	100,552	161,595
Ceylon ...	434,082	1,188,136	4,249,831	2,567,199	7,589,212
Fiji ...	121,771	173,079	246,671	364,786	400,807
Hong Kong ...	489,987	375,559	579,829	722,267	856,313
India ...	405,662	1,222,454	3,341,699	2,242,499	2,915,090
Mauritius ...	54,890	36,992	52,075	34,823	20,328
New Zealand ...	987,718	1,131,067	1,725,234	2,432,561	2,228,551
Papua ...	17,682	46,150	46,744	86,680	140,338
South African Union ...	181,270	2,513,075	3,180,034	1,861,990	1,488,153
Straits Settlements ...	105,040	103,742	209,612	665,999	1,017,335
Other British Possessions ...	9,452	28,164	71,641	70,098	70,222
Total British Possessions	2,820,347	6,896,045	13,876,127	11,149,454	16,887,944
Total British Countries ...	25,851,126	32,233,501	39,337,816	44,624,817	48,347,261
Foreign Countries—					
Argentine Republic ...	195	20,938	30,485	77,030	129,306
Belgium ...	1,422,378	1,488,784	2,695,512	5,247,007	6,584,532
Chile and Peru ...	155,666	239,391	473,650	626,493	736,257
China ...	23,778	208,601	242,580	223,643	191,478
France ...	2,064,639	2,641,244	4,190,591	7,302,738	8,022,319
Germany ...	1,580,692	2,128,596	3,406,633	6,944,941	7,441,246
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is.	227,756	349,921	350,797	487,790	666,725
Italy ...	44,954	177,742	156,913	327,966	623,049
Japan ...	48,231	138,686	580,670	1,069,390	1,169,335
Java ...	70,581	125,285	157,559	335,994	573,231
Netherlands ...	45,008	69,633	226,958	289,461	264,956
Norway ...	971	105	14	5,558	1,540
Philippine Islands ...	24,664	150,999	331,047	538,382	565,345
Spain ...	7,047	12,835	61,300	14,643	3,062
Sweden ...	1,433	1,485	3,915	1,595	8,490
United States of America ...	1,263,128	3,941,509	2,591,428	2,092,637	2,043,186
Other Foreign Countries ...	234,656	510,602	408,114	1,075,425	1,724,772
Total Foreign Countries	7,215,777	12,206,356	15,908,166	26,660,693	30,748,829
Total ...	33,066,903	44,439,857	55,245,982	71,285,510	79,096,090

If each item be expressed as a percentage on the total export, the results will be as follows:—

**COMMONWEALTH EXPORTS.—PERCENTAGES OF THE EXPORTS TO EACH
COUNTRY ON THE TOTAL EXPORTS, 1892 to 1912.**

Country.	1892-6.	1897-1901.	1902-6.	1907-11.	1912.
	per cent.	per cent.	per cent.	per cent.	per cent.
United Kingdom ...	69.65	57.02	46.08	46.96	39.77
British Possessions—					
Canada ...	0.04	0.17	0.31	0.14	0.20
Ceylon ...	1.31	2.67	7.69	3.60	9.60
Fiji ...	0.37	0.39	0.45	0.51	0.51
Hong Kong ...	1.48	0.85	1.04	1.01	1.08
India ...	1.23	2.76	6.05	3.15	3.69
Mauritius ...	0.16	0.08	0.09	0.05	0.03
New Zealand ...	2.99	2.55	3.12	3.41	2.32
Papua ...	0.06	0.10	0.08	0.12	0.18
South African Union ...	0.55	5.66	5.76	2.61	1.88
Straits Settlements ...	0.33	0.23	0.40	0.94	1.28
Other British Possessions ...	0.01	0.06	0.13	0.10	0.08
Total British Possessions	8.53	15.52	25.12	15.64	21.35
Total British Countries ...	78.18	72.54	71.20	62.60	61.12
Foreign Countries—					
Argentine Republic ...	0.00	0.05	0.05	0.11	0.16
Belgium ...	4.30	3.35	4.88	7.36	8.32
Chile and Peru ...	0.47	0.54	0.86	0.88	0.93
China ...	0.07	0.47	0.44	0.31	0.24
France ...	6.25	5.94	7.58	10.25	10.15
Germany ...	4.78	4.79	6.17	9.74	9.41
Hawaiian Is., New Britain, New Caledonia, New He- brides and South Sea Is.	0.69	0.79	0.64	0.68	0.85
Italy ...	0.14	0.40	0.28	0.46	0.80
Japan ...	0.15	0.31	1.05	1.50	1.48
Java ...	0.21	0.28	0.29	0.47	0.72
Netherlands ...	0.14	0.16	0.41	0.41	0.34
Norway ...	0.00	0.00	0.00	0.01	0.00
Philippine Islands ...	0.07	0.34	0.60	0.75	0.71
Spain ...	0.02	0.02	0.11	0.02	0.00
Sweden ...	0.00	0.00	0.01	0.00	0.01
United States of America ...	3.82	8.87	4.69	2.94	2.58
Other Foreign Countries ...	0.71	1.15	0.74	1.51	2.18
Total Foreign Countries...	21.82	27.46	28.80	37.40	38.88
Total ...	100	100	100	100	100

9. **Exports to the United Kingdom.**—Notwithstanding an increase of 36.50 per cent. in the actual value of exports to the United Kingdom during the year 1912 as compared with the yearly average of the period 1892-96, the proportion of the total

exports despatched to the United Kingdom has fallen from 69.65 per cent. in the earlier period to 39.77 per cent. in the year 1912. This decrease is, to some extent, undoubtedly due to the fact that wool and other commodities which were formerly despatched to the United Kingdom, and distributed from that centre, are now to a greater extent shipped direct to continental ports.

The principal exports to the United Kingdom during the year 1912 were as follows:—Butter, £2,942,434; fruit—apples, £304,479, other, including pulp, £53,026; grain and pulse—wheat, £4,528,590; flour, £326,423, other, £22,643; hair, £30,640; jewellery and precious stones, £151,791; leather, £431,997; meat, frozen—beef, £1,245,536, mutton, £908,059, lamb, £591,589, rabbits and hares, £313,806, other frozen meat, £56,396; potted meat, £102,931; meat, preserved in tins, £489,595; minerals and metals—copper—concentrates, £2976, ingots, £160,445, in matte, £679,776, ore, £95,099; gold—bullion, £506,207, in matte, £313,192, ore, £56,077; silver—bullion, £73,782, in matte, £216,722, silver and silver-lead—concentrates, £19,835, ore, £23,878; lead—pig, £696,026, in matte, £329,780; ores, other, £58,576; tin, ingots and ore, £646,784; zinc concentrates, £80,798; oil, cocoanut, £155,848; pearlshell, £427,085; skins—hides, £430,609, rabbit and hare, £342,276, sheep, £670,816, other skins, £263,255; specie, gold, £381,172; tallow, £1,142,748; timber, £80,259; wine, £85,076; wool—greasy, £8,586,824; scoured, £1,831,653.

10. Exports to British Possessions.—The exports from the Commonwealth to other British Possessions are largely composed of gold despatched to India and Ceylon. These gold shipments to which further reference is made on page 542 were particularly heavy in 1912, being greater in that year than in any year since 1894. Of the total exports to British Possessions during 1912, viz., £16,887,944, as much as £10,458,641 or 61.93 per cent. was gold.

11. Principal Exports to British Possessions, 1912.—These are as follow :—

(i.) *Canada.* Butter, £4673; meats, £45,894; oil, cocoanut, £2707; skins, £81,392; timber, undressed, £5893; wool, £7155.

(ii.) *Ceylon.* Butter, £11,951; gold, bullion, £96,632; fodder, £5835; horses, £3403; grain—flour, £31,616; lead, pig, £21,050; silver, bullion, £247,658; soap, £11,187; specie, £7,107,355; sugar, £2061.

(iii.) *Fiji.* Apparel and textiles—apparel, including boots and shoes, £18,126; textiles, £11,105; bags, sacks, and cordage, £5026; biscuits, £23,907; coal, £14,756; drugs and chemicals—fertilizers, £10,718, other, £9019; grain, prepared—bran, pollard, and sharps, £30,793; flour, £20,740; machines and machinery, £10,021; metal manufactures, £41,989; oils, £7818; specie, £25,000; timber, undressed, £18,119; vehicles £8227; vessels, £1250.

(iv.) *Hong Kong.* Butter, £25,574; fish, £34,515; flour, £17,133; lead, pig, £92,199; sandalwood, £11,567; specie, gold, £615,053; copper, ingots, £12,293.

(v.) *India.* Coal, £62,045; gold, bullion, £797,655; specie, £1,273,280; horses, £129,186; hay and chaff, £11,886; lead, pig, £20,358; meats, £1692; silver bullion, £258,715; tallow, £13,469; timber, undressed, £213,403; wool, £18,739; flour, £13,099.

(vi.) *New Zealand*. Apparel, textiles, etc.:—apparel—boots and shoes, £3599; other apparel, £26,658; textiles, £51,081; bags and sacks, £19,574; bark, tanning, £34,224; books and periodicals, £78,956; cameras, magic lanterns, phonographs, etc., £45,633; coal, £209,591; copper, ingots, £11,678; drugs and chemicals—fertilisers, £94,483; medicines, £39,404; other drugs, etc., £38,488; electrical materials, £9506; fodders, £1297; fruit, fresh, £44,454, dried, £20,459; glass and glassware, £10,028; grain—flour, £11,377; rice, £30,661; horses, £11,465; india rubber manufactures, £86,398; iron, pig, £1589; jewellery and precious stones, £18,021; lead, pig, £24,459; leather and leather manufactures, £45,690; metals, manufactures of—agricultural implements and machinery, £17,556; other machines and machinery, £78,532; other manufactures of metals, £81,671; oils, etc., £18,076; onions, £6459; plants, trees and bulbs, £13,949; salt, £13,794; seeds, £9963; soap, £32,510; specie—gold, £290,000; spirits, £25,976; stationery, £93,838; sugar, £7646; tea, £62,031; timber, £174,225; tin, ingots, £32,271; tobacco, £92,638; wine, £26,900.

(vii.) *Papua*. Apparel and textiles, etc., £15,396; flour, £4239; machinery and manufactures of metal, £19,753; meats, £13,124; rice, £10,651; tobacco, £7041.

(viii.) *South African Union*. Animals, living—sheep, £49,683; butter, £113,099; fruits—fresh, £4653; other, £4129; grain—wheat, £355,813; flour, £221,532; jams and jellies, £10,204; leather, £91,801; meats, frozen beef, £97,601; mutton and lamb, £23,919; other meats, £38,046; oil, cocoanut, £2209; seeds, £4029; specie, gold, £25,000; tallow, unrefined, £65,131; timber, £271,700.

(ix.) *Straits Settlements*. Butter, £35,914; coal, £62,005; grain, flour, £133,054; horses, £11,322; machines and machinery, £11,982; meats, £49,738; specie, gold, £227,292; tin ore, £387,524; tin concentrates, £18,602.

12. **Exports to Foreign Countries.**—The foregoing table shews a very great increase in the value of exports to foreign countries, both in actual amounts and in relation to total exports. The value of exports to foreign countries during 1912 shews an increase of 326 per cent. over similar figures for the years 1892-6, thus increasing the proportion per cent. of all exports from 21.82 per cent. in the earlier years to 38.88 per cent. in 1912. This increase is largely due to the direct consignment of wool and other produce to European countries, instead of distributing from London, as in the earlier years. A striking feature in this table is the apparent contraction of exports to the United States. From the figures given in the table, it would appear that the sales to the United States were less in 1912 than the annual average during the past fifteen years. These figures, however, include gold bullion and specie, which during the quinquennium 1897-1901 amounted to an average of nearly £3,000,000 per annum, and about £1,300,000 during the period 1902-6, whereas during 1912 no gold bullion or specie was shipped to the United States of America.

13. **Principal Exports to Foreign Countries, 1912.**—These are as follow:—

(i.) *Argentine Republic*. Agricultural implements and machinery, £107,420; coal, £11,120; timber, £4447.

(ii.) *Belgium*. Bark, tanning, £15,520; copper, £776,743; grain, wheat, £279,449; lead, £39,036; leather, £11,119; silver and silver-lead ore, £94,594; concentrates £805,697; hides and skins, £658,047; tallow, £51,496; timber, £19,300; tin, £14,460; wool, £2,480,348; zinc ore, £1661, concentrates, £1,260,642.

(iii.) *Chile*. Coal, £463,231.

(iv.) *China*. Butter, £35,789; copper, £28,406; flour, £15,918; lead, £38,521; sandalwood, £16,619; specie, gold, £27,587; leather, £11,497.

(v.) *Egypt*. Butter, £13,060; flour, £56,557; meats—beef, £24,537, mutton and lamb, £8282, other meats, £2664; wheat, £85,970.

(vi.) *France*. Concentrates—silver, £56,200, zinc, £132,901; copper ingots, £128,760; hides and skins, £1,017,597; lead, £42,441; ores, £19,734; tallow, £56,713; wheat, £10,913; wool, £6,527,854.

(vii.) *Germany*. Bark, tanning, £20,630; concentrates—silver, £94,933, zinc, £307,768; copper, £642,744; fruit, fresh, £62,217; grain—wheat, £115,340; hides and skins, £214,056; lead, £70,638; linseed cake and oilcake, £2070; meats, preserved in tins, £8058; oil, cocoanut, £9669; ores—silver and silver lead, £95,292, wolfram, £64,154; zinc, £12,150, other ores, £11,855; precious stones, unset, £25,502; sausage casings, £72,191; specie, gold, £400,351; tallow, £5662; timber, £18,844; tin ingots, £53,397; wool, £5,050,974.

(viii.) *Italy*. Copper matte, £36,060; lead, £7050; meats, preserved, £28,630; skins, £126,209; tallow £69,264; tin ingots, £11,681; wool, £230,536.

(ix.) *Japan*. Butter, £5713; grain, wheat, £7844; hides, £8378; lead, £233,154; manures, £28,385; oils, £19,661; tallow, £78,891; wool, £703,371.

(x.) *Java*. Butter, £81,898; cattle, £19,282; coal, £105,905; fertilisers, £12,244; flour, £256,531; cattle, £19,282; horses, £13,459; meats, £12,994; gold, specie, £25,000.

(xi.) *Netherlands*. Concentrates—silver, £36,988, zinc, £180,967; tallow, £21,207; wool, £5972; gold ore, £10,372.

(xii.) *Peru*. Coal, £32,644; wheat, £237,915.

(xiii.) *Philippine Islands*. Butter, £40,296; cattle, £35,884; coal, £54,932; flour, £149,500; fodder, £23,695; horses, £5449; meats—bacon and hams, £24,906, beef, £162,555, mutton and lamb, £9271, pork, £5000, other meats, £9211.

(xiv.) *United States of America*. Coal, £55,580; copper, £686,683; gold, in matte, £143,337; hides and skins, £458,935; pearlshell, £95,155; silver in matte, £24,627; tin, £33,828; wool, £460,275.

§ 6. Development of Export Trade to Eastern Countries.

1. *Trade with Eastern Countries*.—The following tables shew the value of exports from the Commonwealth to Eastern countries during the last five years in comparison with the year 1901. The principal countries concerned in this trade are China, India, Ceylon, Japan, Java, Philippine Islands, Straits Settlements, and Hong Kong, and the particulars given in the tables apply to these countries only:—

**VALUE OF PRINCIPAL ITEMS OF MERCHANDISE EXPORTED FROM THE
COMMONWEALTH TO EASTERN COUNTRIES, 1901 to 1912.**

Article.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
Butter	64,585	151,984	166,046	171,372	181,418	237,020
Coal	154,950	501,002	293,584	265,011	240,012	290,243
Copper	39,375	239,646	43,255	29,090	26,296	91,580
Grain and pulse—						
Wheat	46,685	111,885	68,558	49,596	17,502	8,605
Flour	184,861	294,615	359,877	421,444	655,287	620,841
Other (prepd. & unprepd.)	4,806	10,536	17,600	21,603	21,748	13,906
Hay, chaff, and comp. fodder	13,081	29,554	30,684	31,838	50,437	50,210
Horses	101,866	199,239	165,370	227,848	182,736	166,134
Lead	10,454	203,799	115,310	230,461	343,915	407,475
Meats	193,751	248,799	206,759	229,461	259,462	304,530
Sandalwood	77,237	77,468	45,120	88,624	73,386	32,675
Skins, hoofs, horns, bones, sinews, tallow	16,419	43,167	46,428	28,158	85,701	126,278
Tin ore	4,096	205,114	186,191	194,066	277,961	387,524
Timber, undressed	79,913	367,322	447,347	351,830	398,049	220,751
Wool	56,618	147,416	251,537	444,890	480,850	722,133
Other merchandise	220,613	338,097	270,433	336,470	412,100	519,833
Total merchandise	1,219,310	3,169,643	2,744,189	3,121,752	3,706,860	4,199,738
Specie & gold & silver bullion	3,339,953	4,014,545	4,394,792	1,873,102	8,931,959	10,677,601
Total exports	4,559,263	7,184,188	7,138,981	4,994,854	12,637,919	14,877,339

It may be mentioned that exports of gold from Australia to eastern countries, chiefly to India and Ceylon, have no bearing upon the business connections of the Commonwealth with those countries, as the destination of these gold shipments, which are merely a contribution towards the liquidation of the international obligations of the Commonwealth, is determined almost entirely by London bankers.

The following tables shew the value of the principal articles exported to each of the undermentioned eastern countries during each of the years 1901 and 1908 to 1912:—

**VALUE OF COMMONWEALTH EXPORTS OF MERCHANDISE TO PRINCIPAL EASTERN
COUNTRIES, 1901 and 1908-12.**

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China	33,906	263,532	116,236	95,771	133,634	163,891
India and Ceylon	417,291	901,983	745,629	759,057	773,359	723,007
Japan	123,355	267,963	432,692	657,057	832,958	1,169,335
Java	197,412	260,344	290,703	340,315	487,696	548,231
Philippine Islands	302,086	604,089	531,438	473,268	512,085	565,345
Straits Settlements	113,407	575,911	444,611	544,815	703,261	790,043
Hong Kong	31,853	295,821	182,880	251,469	263,867	239,886
Total	1,219,310	3,169,643	2,744,189	3,121,752	3,706,860	4,199,738

BUTTER.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China	1,987	11,207	17,397	19,352	12,345	35,789
Hong Kong	8,555	21,713	19,696	21,767	21,303	25,570
India and Ceylon	9,696	8,627	7,373	9,239	8,942	12,381
Japan	1,504	7,063	4,375	5,383	8,067	5,713
Java	11,919	39,583	54,267	61,366	76,618	81,408
Philippine Islands	21,061	46,447	42,402	30,865	25,252	40,296
Straits Settlements	9,863	17,344	20,536	23,400	28,891	35,863
Total	64,585	151,984	166,046	171,372	181,418	237,020

The exports of butter given above for the year 1912 were shipped from the several States as follows:—New South Wales, £79,003; Victoria, £105,421; Queensland, £51,123; South Australia, £1473.

COAL.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	20,041	7,470	1,245	2,700	510
Hong Kong ...	7,653	39,040	17,908	5,321	...	192
India and Ceylon ...	17,639	94,617	34,205	32,753	18,924	66,699
Japan ...	1	...	...	63	...	...
Java ...	43,110	44,614	34,132	47,856	65,819	105,905
Philippine Islands...	59,936	190,920	121,668	105,195	82,914	54,932
Straits Settlements...	26,611	111,770	78,201	72,578	69,655	62,005
Total ...	154,950	501,002	293,584	265,011	240,012	290,243

These exports of coal are chiefly from New South Wales. The decline in the exports of coal is, doubtless, due to the coal miners' strike in November, 1909. Mr. J. B. Suttor, Commercial Commissioner for New South Wales in the East, in his report for 1909 says that, owing to the uncertainty of deliveries from Australia, in consequence of labour troubles, the time is far distant when the trade will again reach the dimensions of recent years. The import returns for the Philippines show 274,767 tons of coal at 2.66 dollars per ton from Japan during 1912, against 119,502 from Australia at 2.42 dollars per ton.

COPPER.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	172,196	23,100	18,469	18,050	28,406
Hong Kong ...	...	...	8,500	1,120	5,426	12,293
India and Ceylon ...	39,375	62,011	6,800	8,959	300	45,403
Japan ...	...	1,465	145	...	2,520	5,478
Java ...	...	2,334	318	...	...	...
Straits Settlements...	...	1,640	4,392	...	...	...
Philippine Islands...	...	...	...	532	...	...
Total ...	39,375	239,646	43,255	29,080	26,296	91,580

The copper exported to the East during 1912 was shipped as follows:—New South Wales, £83,580; South Australia, £8000.

GRAIN AND PULSE—WHEAT.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	...	10	18	...	...
Hong Kong ...	...	...	...	14	...	...
India and Ceylon ...	35,660	111,872	22,414	162	228	316
Japan ...	11,016	13	12,694	49,379	17,211	7,844
Java ...	9	...	34	17	11	22
Philippine Islands ...	...	...	33,404	...	29	418
Straits Settlements...	...	...	2	6	23	5
Total ...	46,685	111,885	68,558	49,596	17,502	8,605

The exports of wheat given above for the year 1912 were shipped from the following States:—New South Wales, £101; Victoria, £714; South Australia, £7770; Western Australia, £20.

GRAIN AND PULSE—FLOUR.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	1,147	3,221	2,671	6,094	12,615	15,918
Hong Kong ...	4,489	4,449	15,462	16,144	44,784	17,133
India and Ceylon ...	22,275	24,368	23,412	23,857	32,319	44,715
Japan ...	7,206	9	2,946	7,583	2,172	3,990
Java ...	82,335	119,397	132,908	166,177	242,898	256,531
Philippine Islands ...	4,046	90,653	117,825	87,668	141,498	149,500
Straits Settlements...	13,363	52,518	64,653	113,921	179,001	133,054
Total ...	134,861	294,615	359,877	421,444	655,287	620,841

The flour exported during 1912, as above, was shipped from the several States as follows:—New South Wales, £232,450; Victoria, £180,001; South Australia, £171,358; Western Australia, £37,032.

GRAIN AND PULSE, OTHER THAN WHEAT AND FLOUR.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	43	226	21	759	861	66
Hong Kong ...	777	81	149	95	5	129
India and Ceylon ...	3,033	6,144	7,451	9,687	9,894	6,061
Japan ...	7	152	15	12	133	61
Java ...	...	1,380	1,735	2,086	1,490	1,550
Philippine Islands ...	946	1,847	7,651	8,115	7,881	4,942
Straits Settlements...	...	706	668	849	1,484	1,097
Total ...	4,806	10,536	17,690	21,603	21,748	13,906

The exports given above for 1912 were shipped from the following States:—New South Wales, £4320; Victoria, £8927; Queensland, £128; South Australia, £531.

HAY AND CHAFF, AND COMPRESSED FODDER.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	2,934	74	700	45	21	33
Hong Kong ...	28	387	61	149	989	230
India and Ceylon ...	5,848	8,777	8,321	11,204	14,094	18,621
Japan ...	57	560	19	3	591	58
Java ...	14	1,573	984	1,111	1,270	1,634
Philippine Islands	2,582	15,340	18,550	15,037	27,332	23,695
Straits Settlements	1,618	2,843	2,049	4,289	6,140	5,939
Total ...	13,081	29,554	30,684	31,838	50,437	50,210

The exports given above for the year 1912 were shipped from the several States as follows:—New South Wales, £5402; Victoria, £43,357; Queensland, £8; South Australia, £105; Western Australia, £1338.

HORSES.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	4,460	892	295	60	390	625
Hong Kong ...	775	545	888	...	800	40
India and Ceylon ...	78,723	141,486	128,887	179,348	189,462	192,589
Japan ...	100	12,234	60	1,860	2,115	2,650
Java ...	2,105	16,457	19,598	10,424	19,235	13,459
Philippine Islands ...	190	12,134	5,303	14,971	7,795	5,449
Straits Settlements...	15,513	15,491	10,339	21,185	12,939	11,322
Total ...	101,866	199,239	165,370	227,848	182,736	166,134

The horses exported to the above countries during 1912 were shipped from the following States:—New South Wales, £40,859; Victoria, £67,860; Queensland, £48,567; South Australia, £8848.

LEAD, PIG.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	6,102	28,456	13,716	24,661	48,586	38,481
Hong Kong ...	1,257	85,625	22,062	66,997	63,257	92,199
India and Ceylon ...	315	59,250	27,400	56,717	43,190	41,408
Japan ...	2,750	30,040	47,905	77,493	187,778	233,154
Java ...	18	106	198	...	...	232
Philippine Islands ...	12	298	4,029	4,553	1,104	1,212
Straits Settlements...	...	24	...	40	...	789
Total... ..	10,454	203,799	115,310	230,461	343,915	407,475

The above lead is almost entirely from the Broken Hill mines of New South Wales.

MEATS—PRESERVED BY COLD PROCESS.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	261	1,099	...	...	...
Hong Kong ...	3,195	7,746	5,332	7,373	11,273	9,109
India and Ceylon ...	5,907	3,581	1,916	4,252	3,029	6,864
Japan ...	19	5,391	1,842	445	935	15
Java ...	...	2,539	949	920	3,540	949
Philippine Islands ...	153,250	181,460	139,260	143,581	135,249	182,724
Straits Settlements...	...	18,376	21,320	25,849	37,593	43,453
Total... ..	162,371	219,354	171,218	182,420	194,619	243,114

The exports to the above-mentioned Eastern countries during 1912 of meats preserved by cold process were shipped from the following States:—New South Wales, £48,326; Victoria, £680; Queensland, £194,108. In addition to the meat included in

the above table, meat preserved by cold process to the value £70,358 was exported to Asiatic Russia in 1908.

MEATS—OTHER THAN MEATS PRESERVED BY COLD PROCESS.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	491	2,367	2,841	5,205	6,531	5,902
Hong Kong ...	571	622	1,249	1,853	4,238	3,220
India and Ceylon ...	11,464	10,054	16,267	12,936	14,415	3,143
Japan ...	893	1,076	1,104	1,137	1,659	1,778
Java ...	14,813	6,224	5,889	8,591	8,875	12,045
Philippine Islands ...	2,617	7,391	6,531	10,707	22,336	29,043
Straits Settlements	531	1,711	1,660	6,612	6,789	6,285
Total ...	31,380	29,445	35,541	47,041	64,843	61,416

The exports given above for the year 1912 were shipped from the following States:—New South Wales, £7840; Victoria, £4118; Queensland, £48,756; South Australia, £693; Western Australia, £9.

SANDALWOOD.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	7,905	6,238	12,180	7,332	2,348	16,619
Hong Kong ...	53,991	65,337	25,546	71,672	62,566	11,567
India and Ceylon ...	...	5,604	2,358	6,301	2,505	3,455
Straits Settlements	15,341	589	5,036	3,319	5,967	1,034
Total ...	77,237	77,468	45,120	88,624	73,386	32,675

These exports of sandalwood in 1912 were shipped from Queensland, £5142; and Western Australia, £27,533.

SKINS, HOOFS, HORNS, BONES, SINEWS, AND TALLOW.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	14	36	...	977	661
Hong Kong ...	1,234	1,706	779	401	129	403
India and Ceylon ...	2,761	5,319	2,958	3,485	9,880	13,538
Japan ...	11,829	35,459	40,363	23,145	72,509	109,562
Java ...	...	315	1,305	337	1,296	909
Philippine Islands ...	165	91	626	389	577	397
Straits Settlements	430	263	361	401	333	808
Total ...	16,419	43,167	46,428	28,158	85,701	126,278

The above exports of skins, etc., in 1912 were shipped from the several States as follows:—New South Wales, £43,915; Victoria, £12,635; Queensland, £69,515; South Australia, £1; Northern Territory, £212.

TIN ORE.

Country.	1901.	1908	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
Straits Settlements	4,096	205,114	186,191	194,066	277,961	387,524

The export of tin ore to the Straits Settlements—the centre of the world's tin production—is for the purpose of treatment, and was shipped from the several States during 1912 as follows:—New South Wales, £201,141; Queensland, £135,311; Western Australia, £25,572; Northern Territory, £25,500.

TIMBER, UNDRESSED.

Country.	1901.	1908.	1909.	1910	1911.	1912.
	£	£	£	£	£	£
China ...	4,090	13,060	26,606	2,699	14,250	2
Hong Kong ...	...	29,015	30,298	19,590	763	3
India and Ceylon ...	61,246	278,372	379,349	307,001	362,549	217,556
Japan ...	418	4,332	1,296	781	476	972
Java ...	20	251	56	307	15	1,298
Philippine Islands ...	9,278	30,849	3,372	21,132	19,616	414
traits Settlements...	4,861	11,443	6,370	320	380	506
Total ...	79,913	367,322	447,347	351,830	398,049	220,751

The above exports of timber during 1912 from the several States were shipped as follows:—New South Wales, £5892; Victoria, £507; Queensland, £725; Western Australia, £213,627.

WOOL.

Country.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
China ...	...	300	250	...	560	...
Hong Kong ...	...	...	...	...	...	23
India and Ceylon ...	7,853	21,708	16,657	24,268	21,290	18,739
Japan ...	48,653	125,408	264,630	420,622	459,000	703,371
Java ...	112	...	...	...	...	...
Total... ..	56,618	147,416	281,537	444,890	480,850	722,133

The wool exported to the East by the several States during 1912 was shipped as follows:—New South Wales, £656,385; Victoria, £19,007; Queensland, £46,741.

§ 7. Trade of Commonwealth since Federation.

1. **Classified Summary of Australian Trade.**—The tables hereunder present the trade of the Commonwealth during each of the years 1901 and 1908 to 1912, arranged in classes according to the nature of the goods:—

STATISTICAL CLASSIFICATION OF IMPORTS AND EXPORTS.

Class.	Articles.
I.	FOODSTUFFS of animal origin, excluding, however, living animals.
II.	FOODSTUFFS of vegetable origin, and common salt.
III.	BEVERAGES, non-alcoholic only, and the substances used in making them.
IV.	SPIRITS AND ALCOHOLIC LIQUORS, including spirits for industrial purposes, and such pharmaceutical preparations as are dutiable as spirits.
V.	TOBACCO, and all preparations thereof.
VI.	LIVE ANIMALS.
VII.	ANIMAL SUBSTANCES, mainly unmanufactured, which are not foodstuffs.
VIII.	VEGETABLE SUBSTANCES and non-manufactured fibres.
IX.	APPAREL, TEXTILES, and various manufactured fibres.
X.	OILS, FATS, AND WAXES.
XI.	PAINTS AND VARNISHES.
XII.	STONES AND MINERALS, used industrially.
XIII.	SPECIE, gold, silver, and bronze.
XIV.	METALS, UNMANUFACTURED, and ores.
XV.	METALS, PARTLY MANUFACTURED.
XVI.	METALS, MANUFACTURED, including machinery.
XVII.	LEATHER AND MANUFACTURES of leather, together with all substitutes therefor, and also INDIARUBBER and INDIARUBBER MANUFACTURES.
XVIII.	WOOD AND WICKER, both raw and manufactured.
XIX.	EARTHENWARE, CEMENTS, CHINA, GLASS AND STONEWARE.
XX.	PAPER AND STATIONERY.
XXI.	JEWELLERY, TIMEPIECES, AND FANCY GOODS.
XXII.	OPTICAL, SURGICAL, AND SCIENTIFIC INSTRUMENTS.
XXIII.	DRUGS, CHEMICALS, AND FERTILISERS.
XXIV.	MISCELLANEOUS.

COMMONWEALTH IMPORTS ARRANGED IN CLASSES, 1901 and 1908 to 1912.

Classes.	1901.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£	£
I. Animal foodstuffs, etc. ...	793,365	834,542	751,044	873,697	816,915	1,037,692
II. Vegetable ...	2,925,985	2,192,674	2,741,811	1,944,050	2,352,957	4,455,662
III. Beverages (non-alcoholic), etc. ...	1,054,324	1,232,292	1,409,713	1,646,052	1,673,449	1,863,712
IV. Alcoholic liquors, etc. ...	1,845,438	1,575,151	1,496,952	1,654,237	1,920,824	2,022,986
V. Tobacco, etc. ...	717,915	778,314	616,221	769,470	899,110	1,045,841
VI. Live animals ...	40,306	108,067	113,724	337,040	395,665	243,489
VII. Animal substances, etc. ...	124,017	400,748	336,981	370,634	296,925	337,652
VIII. Vegetable ...	459,361	944,233	997,205	1,120,045	1,329,295	1,493,582
IX. Apparel, etc. " " ...	12,065,367	13,844,687	14,765,738	17,438,605	17,840,496	19,495,762
X. Oils, etc. ...	1,290,252	1,190,816	1,337,429	1,596,643	1,807,983	2,192,317
XI. Paints, etc. ...	385,049	419,809	416,418	481,392	485,240	676,861
XII. Stones, etc. ...	131,095	119,248	164,069	469,598	173,533	201,317
XIII. Specie ...	172,395	239,088	54,197	374,484	381,482	542,937
XIV. Metals, unmanufd., ores, etc. ...	984,327	1,178,535	1,232,610	1,221,721	1,937,723	1,488,167
XV. Metals, part manufactured ...	1,062,309	749,036	741,184	1,035,864	1,169,509	1,424,261
XVI. Metals, manufactured ...	7,491,636	10,171,607	10,372,019	12,074,821	14,211,581	16,985,089
XVII. Leather, etc. ...	523,565	932,033	1,080,222	1,303,134	1,586,503	1,788,272
XVIII. Wood, etc. ...	1,814,382	2,343,862	2,060,231	2,583,065	3,361,477	3,565,445
XIX. Earthenware, etc. ...	925,101	855,855	791,705	1,015,313	1,228,122	1,445,090
XX. Paper, etc. ...	1,731,330	2,234,930	2,098,638	2,457,216	2,831,808	3,116,215
XXI. Jewellery, etc. ...	1,065,348	1,102,644	1,203,528	1,428,029	1,755,583	1,873,917
XXII. Instruments, etc. ...	218,437	380,140	412,547	444,990	504,775	517,677
XXIII. Drugs, etc. ...	1,472,162	1,916,680	1,744,023	2,186,005	2,178,600	2,394,162
XXIV. Miscellaneous ...	3,140,345	4,054,282	4,233,687	5,188,246	5,827,932	7,951,095
Grand total ...	42,433,811	49,799,273	51,171,896	60,014,851	66,967,488	78,158,600

The exports are shewn according to the same classification, and the usual distinction is made between exports of Australian produce and re-exports. It will be seen what

a small proportion of the total exports is made up by re-exports, and that the latter consist largely of specie minted from imported gold.

**COMMONWEALTH EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING
AUSTRALIAN AND THE PRODUCE OF OTHER COUNTRIES.
1901 and 1908 to 1912.**

Classes	1901.	1908.	1909.	1910.	1911.	1912.
AUSTRALIAN PRODUCE.						
I. Animal foodstuffs, etc. ...	£ 4,104,196	£ 4,841,315	£ 5,473,619	£ 8,791,463	£ 9,015,595	£ 7,991,038
II. Vegetable foodstuffs, etc. ...	4,633,926	4,710,815	5,449,099	11,584,269	11,910,303	8,741,065
III. Beverages (non-alcoholic), etc. ...	2,598	3,589	3,883	5,826	5,534	4,895
IV. Alcoholic liquors, etc. ...	134,630	112,621	133,992	137,826	167,137	131,850
V. Tobacco, etc. ...	5,030	83,142	76,594	87,226	69,035	78,901
VI. Live animals ...	473,601	263,737	266,485	306,724	298,691	327,524
VII. Animal substances, etc. ...	16,754,006	25,431,142	28,969,938	33,128,767	29,714,471	31,283,280
VIII. Vegetable substances, etc. ...	142,060	231,618	195,951	279,053	245,771	173,685
IX. Apparel, etc. ...	42,142	65,304	78,559	77,217	72,852	76,912
X. Oils, etc. ...	843,755	945,113	1,422,710	2,192,992	2,234,884	1,845,916
XI. Paints, etc. ...	620	3,347	4,682	5,871	6,577	6,799
XII. Stones, etc. ...	1,041,974	1,421,304	874,628	943,195	926,655	1,160,962
XIII. Specie ...	8,884,816	9,819,576	4,267,070	1,199,679	8,210,535	9,057,444
XIV. Metals, unmanufd., ores, etc. ...	8,916,269	11,724,275	10,324,317	10,341,849	10,674,748	12,364,321
XV. Metals, part manufactured ...	3,802	25,568	7,570	5,922	10,270	18,007
XVI. Metals, manufactured ...	117,662	225,878	207,893	221,037	252,756	303,219
XVII. Leather, etc. ...	660,692	573,742	524,711	576,918	583,556	715,961
XVIII. Wood, etc. ...	666,024	1,038,256	1,033,336	1,020,917	1,061,582	908,049
XIX. Earthenware, etc. ...	6,600	31,952	14,453	13,284	13,967	18,915
XX. Paper, etc. ...	22,171	64,738	58,853	58,066	68,957	71,905
XXI. Jewellery, etc. ...	67,978	141,654	141,950	135,068	161,553	170,962
XXII. Instruments, etc. ...	507	5,613	6,867	6,922	5,623	6,347
XXIII. Drugs, etc. ...	86,299	212,421	211,297	243,885	255,716	267,946
XXIV. Miscellaneous ...	130,418	142,233	164,194	189,189	218,382	234,760
Total ...	47,741,776	62,118,903	62,843,711	71,836,195	76,205,210	75,961,563

OTHER PRODUCE.

I. Animal foodstuffs, etc. ...	£ 35,291	£ 20,698	£ 21,872	£ 23,722	£ 25,369	£ 23,486
II. Vegetable foodstuffs, etc. ...	80,371	280,357	201,555	192,832	210,515	170,060
III. Beverages (non-alcoholic), etc. ...	43,308	62,285	82,138	91,514	85,661	78,329
IV. Alcoholic liquors, etc. ...	55,732	31,259	30,736	37,234	40,744	42,407
V. Tobacco, etc. ...	61,753	40,127	52,889	57,133	52,697	52,501
VI. Live animals ...	105	1,170	935	5,335	12,017	5,433
VII. Animal substances, etc. ...	10,070	7,401	3,423	7,363	8,392	5,709
VIII. Vegetable substances, etc. ...	17,625	16,172	19,588	18,483	26,755	65,955
IX. Apparel, etc. ...	171,014	229,070	205,936	200,870	185,412	204,565
X. Oils, etc. ...	42,292	65,324	39,134	38,394	45,960	52,019
XI. Paints, etc. ...	15,186	7,735	6,462	8,135	7,408	8,263
XII. Stones, etc. ...	2,043	2,308	2,941	2,779	1,646	1,846
XIII. Specie ...	846,921	660,882	1,099,221	1,047,758	1,639,951	1,420,151
XIV. Metals, ores, etc. ...	9,744	11,517	6,287	8,463	17,820	23,414
XV. Metals, part manufactured ...	13,806	20,602	32,566	32,994	24,952	25,404
XVI. Metals, manufactured ...	196,334	213,468	206,004	261,708	266,681	268,603
XVII. Leather, etc. ...	13,074	42,802	52,053	59,653	65,321	55,210
XVIII. Wood, etc. ...	32,135	36,627	30,095	37,290	34,966	33,627
XIX. Earthenware, etc. ...	23,337	15,992	12,328	16,839	15,237	15,702
XX. Paper, etc. ...	52,171	61,177	62,459	75,103	77,951	111,817
XXI. Jewellery, etc. ...	54,431	59,633	63,095	147,493	148,854	87,186
XXII. Instruments, etc. ...	13,555	54,775	55,742	54,125	66,171	93,072
XXIII. Drugs, etc. ...	42,976	45,220	46,786	51,154	49,658	55,367
XXIV. Miscellaneous ...	121,122	202,554	140,280	178,581	166,910	234,401
Total ...	1,954,396	2,192,155	2,475,125	2,654,955	3,277,048	3,134,527

EXPORTS ARRANGED IN CLASSES, AND DISTINGUISHING AUSTRALIAN PRODUCE
AND THE PRODUCE OF OTHER COUNTRIES, 1901 and 1908 to 1912.—Continued.

Classes.	1901.	1908.	1909.	1910.	1911.	1912.
TOTAL EXPORTS.						
I. Animal foodstuffs, etc. ...	£ 4,139,487	£ 4,862,013	£ 5,495,491	£ 8,815,185	£ 9,040,964	£ 8,014,524
II. Vegetable foodstuffs, etc. ...	4,714,297	4,991,172	8,641,654	12,077,131	12,120,818	8,911,125
III. Beverages (non-alcoholic), etc. ...	45,906	65,824	86,021	97,340	91,195	83,224
IV. Alcoholic liquors, etc. ...	190,362	143,880	164,728	175,060	207,881	174,257
V. Tobacco, etc. ...	66,783	123,269	129,483	124,359	121,732	131,402
VI. Live animals ...	473,706	264,907	207,420	312,059	310,708	332,957
VII. Animal substances, etc. ...	16,764,076	25,438,543	28,973,421	33,136,130	29,722,863	31,238,989
VIII. Vegetable substances, etc. ...	159,685	247,790	215,839	297,536	272,526	239,640
IX. Apparel, etc. ...	213,156	294,374	284,495	278,087	258,264	281,477
X. Oils, etc. ...	886,047	1,010,437	1,461,844	2,231,386	2,280,844	1,897,935
XI. Paints, etc. ...	15,806	11,082	11,144	14,006	13,985	15,062
XII. Stones, etc. ...	1,044,017	1,423,612	877,569	945,974	928,301	1,162,808
XIII. Specie ...	9,731,737	10,480,458	5,366,291	2,247,437	9,850,546	10,477,595
XIV. Metals, unmanufact., ores, etc. ...	8,926,013	11,735,792	10,330,604	10,350,312	10,692,568	12,387,735
XV. Metals, part manufactured ...	17,609	46,170	40,436	41,916	35,222	44,311
XVI. Metals, manufactured ...	313,996	439,346	413,897	482,745	519,437	571,822
XVII. Leather, etc. ...	673,766	616,544	576,764	636,571	648,877	771,171
XVIII. Wood, etc. ...	698,159	1,074,883	1,063,431	1,058,207	1,116,548	941,676
XIX. Earthenware, etc. ...	29,937	47,944	26,781	30,123	29,204	34,617
XX. Paper, etc. ...	74,342	125,915	121,312	133,169	146,908	183,722
XXI. Jewellery, etc. ...	122,409	201,287	205,045	282,561	310,407	258,148
XXII. Instruments, etc. ...	14,062	60,388	62,609	61,047	71,794	96,419
XXIII. Drugs, etc. ...	129,275	260,641	258,083	295,039	305,374	323,313
XXIV. Miscellaneous ...	251,540	344,787	304,474	367,770	385,292	469,161
Total ...	49,696,172	64,311,058	65,318,836	74,491,150	79,482,258	79,096,090

From the above table it will be seen that there has been a very substantial expansion in the principal divisions of the export trade of the Commonwealth. Compared with 1901 the exports in 1912 of animal foodstuffs, principally butter and meat, shew an increase of 93.61 per cent.; vegetable foodstuffs, principally wheat, shew an increase during the same period of 89.12 per cent.; animal substances—wool, skins, etc.—shew an increase of 86.65 per cent.; oils, fats, and waxes—mainly tallow—an increase of 114.19 per cent.; and metals, ores, etc. an increase of 38.76 per cent.

§ 8. Movement of Specie and Bullion.

1. **Specie and Bullion.**—The following tables shew the value of gold and silver bullion and specie, including bronze specie, imported and exported during the years 1901 and 1908 to 1912 :—

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 and 1908 to 1912.

Items.	1901.	1908.	1909.	1910.	1911.	1912.
IMPORTS.						
Gold—Specie ...	£ 3,710	£ 14,426	£ 11,566	£ 26,008	£ 25,534	£ 244,737
Bullion ...	762,415	950,575	999,884	952,436	1,584,036	1,125,807
Total ...	766,125	965,001	1,011,450	978,444	1,609,570	1,370,544
Silver—Specie ...	158,656	209,564	32,337	332,054	338,765	277,614
Bullion ...	54	689	2,294	5,040	4,063	6,496
Total ...	158,710	210,253	34,631	337,094	342,828	284,110
Bronze—Specie ...	10,029	15,098	10,294	16,422	17,183	20,586
Grand total ...	934,864	1,190,352	1,056,375	1,331,960	1,969,581	1,675,240

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND BULLION, 1901 AND 1908 TO 1912.—Continued.

Items	1901.	1908.	1909.	1910.	1911.	1912.
EXPORTS.						
Gold—Specie	£ 9,708,037	£ 10,438,665	£ 5,349,066	£ 2,178,123	£ 9,829,689	£ 10,440,058
Bullion	4,616,039*	3,128,073	3,024,085	1,930,660	1,711,093	1,403,621
Total	14,324,076	13,566,738	8,373,151	4,108,783	11,540,782	11,843,679
Silver—Specie	23,370	39,781	16,374	69,134	20,823	37,537
Bullion	922,443†	581,689	289,908	457,180	485,447	580,384
Total	945,813	621,470	306,282	526,314	506,270	617,921
Bronze—Specie	330	2,012	851	180	34	...
Total { Australian produce	14,423,298	13,526,398	7,580,158	3,587,201	10,403,796	11,039,919
{ Other produce	846,921	663,822	1,100,126	1,048,076	1,643,290	1,421,631
Grand total	15,270,219	14,190,220	8,680,284	4,635,277	12,047,086	12,461,600

* Includes gold contained in matte. The value of gold contained in matte exported during 1908 was £761,100, during 1909, £524,183, during 1910, £549,924, during 1911, £437,761 and during 1912, £473,791. † Includes silver contained in matte. The value of silver contained in matte exported during 1908 was £489,460, during 1909, £370,329, during 1910, £296,228, during 1911, £219,971, and during 1912, £255,728.

COMMONWEALTH IMPORTS AND EXPORTS OF SPECIE AND GOLD AND SILVER BULLION FROM AND TO PRINCIPAL COUNTRIES, 1912.

Country.	Imports.			Exports		
	Specie.	Bullion.	Total.	Specie.	Bullion.	Total.
United Kingdom	£ 287,421	£ 6,866	£ 294,287	£ 395,175	£ 579,989	£ 975,164
Ceylon	...	...	...	7,107,355	344,290	7,451,645
Fiji	1,000	...	1,000	25,000	61	25,061
Hong Kong	...	...	...	615,053	1,374	616,427
India... ..	...	...	...	1,273,280	1,056,370	2,329,650
New Zealand	243,362	1,072,480	1,315,842	290,100	163	290,263
Papua	...	50,758	50,758	1,136	...	1,136
South African Union	...	...	...	80,800	...	80,800
Straits Settlements	...	...	...	177,292	...	177,292
Total British Countries	531,783	1,130,104	1,661,887	9,965,191	1,982,247	11,947,438
China	...	...	...	27,587	...	27,587
Germany	10,000	...	10,000	400,351	1,108	401,459
Pacific Islands	581	...	581	56,797	...	56,797
Other Countries	573	2,199	2,772	27,669	650	28,319
Total Foreign Countries	11,154	2,199	13,353	512,404	1,758	514,162
Grand total	542,937	1,132,303	1,675,240	10,477,595	1,984,005	12,416,600

2. **Imports of Bullion and Specie.**—Of the total imports of bullion and specie into the Commonwealth during 1912, 67.20 per cent. was in the form of gold bullion, and was received almost entirely from New Zealand for the purpose of minting.

3. **Exports of Bullion and Specie.**—Of the total exports of bullion and specie during 1912, gold represented 95.05 per cent., 83.79 per cent. being in the form of specie, and 11.26 per cent. bullion.

The countries which appear as the largest recipients of gold from Australia are Ceylon, India, United Kingdom, Hong Kong, and Germany, in the order named, but as large amounts of gold, recorded as exported to Ceylon, are shipped *under option*, and may be despatched thence to any other country, the actual amount received by each country cannot be stated. Moreover, the dimensions of the gold shipments from Australia to particular countries are without any significance regarding the business transactions between Australia and those countries. Shipments of gold merely represent a contribution towards the liquidation of liabilities or the establishment of credit abroad; and Great Britain being the principal creditor and banker, shipments of gold from the Commonwealth are for the most part directed by London bankers to suit their requirements.

§ 9. Effects of Prices on the Values of Exports.

1. **Significance of Price in Totals.**—In comparing the value of exports from, and also imports into, any country for a series of years the question naturally arises as to how much any variation in the aggregate value is due to fluctuations in prices, and how much to increase or decrease of actual quantities, for, in aggregates expressed only in value—the only possible method when the commodities differ—the two sources of variation are confused.

The scheme of comparison followed hereinafter is that of the British Board of Trade. This is to select all such articles of export as are recorded by units of quantity, and to apply to the quantities exported during each year the average price per unit ruling in some year, arbitrarily taken for the purposes of comparison as the basic year. The ratio which the total actually recorded for the year under review bears to the total obtained by applying to the quantities of the year under review the average prices ruling during the basic year, may be called the “price-level” of the latter—as compared with the former—for the group of commodities considered, and may be taken (so it is assumed in the method of the British Board of Trade) as a measure of the effect of the change of price in the intervening period. Since the value of the articles used in the calculations represents as much as 83 per cent. of all exports during 1912—after excluding specie and gold bullion, which are not subject to price changes—a fairly extensive basis is afforded on which to found an estimate of the effect of prices over the full range of exports.

2. **Effect of Prices.**—The following table shews the values of exports as actually recorded in each year, together with the values computed on the assumption that the prices of 1901 were maintained. The table also shews the yearly “price-levels,” based upon the results so ascertained.

This table obviously furnishes a measure of the influence of prices on the value of exports of each year since 1901. Column IV.—values computed on 1901 prices—represents the volume of exports (less specie and gold bullion), expressed in the commo_n

denomination of value, and from the figures therein it will be seen that, had the prices of 1901 remained constant, the value of the exports of merchandise during the year 1912, for example, would have been £53,175,536 only, instead of £67,214,874—the value actually recorded. The difference between these amounts (£14,039,338) results from a rise of 26.4 per cent. (i.e., from 1000 to 1264) in the price of commodities for the period intervening between 1901 and 1912.

It will be seen from the column of "Price-Levels" that prices as indicated by the Commonwealth exports rose steadily from the beginning of the decade to the year 1907. The financial crisis in the United States of America caused a pronounced fall in the prices of 1908. Owing to the large proportion of the aggregate value of exports represented by wool and wheat, any change in the price of these commodities has a marked effect on the index-numbers for the total group of exports, and it is to their influence that the fall of prices in 1911 is mainly due.

EFFECT OF PRICES ON THE VALUE OF COMMONWEALTH EXPORTS AND EXPORT PRICE-LEVELS FOR THE PERIOD 1901 to 1912.

(BASIC YEAR, 1901.)

Year.	Exports of Specie and Gold Bullion.	Other Exports.		Total Exports (including Specie and Gold Bullion).		Price-Levels, ¹ Year 1901 = 1000.
		Values as Recorded.	Values Computed on 1901 Prices.	Values as Recorded.	Values Computed on 1901 Prices.	
I.	II. £	III. £	IV. £	V. £	VI. £	VII.
1901 ...	14,347,776	35,348,396	35,348,396	49,696,172	49,696,172	1000
1902 ...	14,568,640	29,346,447	27,375,976	43,915,087	41,944,616	1072
1903 ...	18,408,702	29,841,410	26,697,120	48,250,112	45,105,822	1118
1904 ...	16,914,691	40,571,224	36,139,840	57,485,915	53,054,531	1123
1905 ...	10,977,111	45,863,924	38,465,210	56,841,035	49,442,321	1192
1906 ...	16,895,059	52,842,704	42,295,310	69,737,763	59,190,369	1249
1907 ...	10,571,263	62,252,984	47,557,141	72,824,247	58,128,404	1309
1908 ...	13,608,531	50,702,527	43,072,809	64,311,058	56,681,340	1177
1909 ...	8,390,376	56,928,460	46,973,200	65,318,836	55,363,576	1212
1910 ...	4,178,097	70,313,053	56,571,308	74,491,150	60,749,405	1243
1911 ...	11,561,639	67,920,619	58,104,744	79,482,258	69,666,383	1169
1912 ...	11,881,216	67,214,874	53,175,536	79,096,090	65,056,752	1264

1. These are index-numbers for the total group of exports, excluding specie and gold bullion.

3. **Influence of Quantity and Price on Total Increased Value of Exports.**—The estimated actual and relative effects of the influence of—(i.) increase or decrease in the exports of specie and gold bullion, (ii.) increase or decrease of *quantities* of other exports, (iii.) variation of prices on the value of the exports of each year compared with 1901, are shewn below.

From the following figures it will be seen that exports of 1912, for example, of specie and gold bullion compared with 1901, shew a decrease of 17.19 per cent., other exports (merchandise) shew an increase of 50.43 per cent. in quantities, and an increase of 26.40 per cent. in the group-prices. These several influences effect an aggregate increase of £29,399,918, or 59.16 per cent., over 1901 as follows:—By increased quantities of merchandise, £17,827,140 (60.64 per cent.); by increased prices, £14,039,338 (47.75 per cent.) accompanied by a decrease of £2,466,560 (17.19 per cent.) in the exports of specie and gold.

ANALYSIS OF INFLUENCE OF QUANTITY AND PRICE ON INCREASE OR DECREASE
IN COMMONWEALTH EXPORTS, 1902 to 1912, COMPARED WITH 1901.

Year.	Particulars.	Variation above (+) or below (—) 1901 Exports due to change in:—			Total Variation above (+) or below (—) Value of 1901 Exports.
		Export of Specie and Gold.	Quantity of Export other than Specie and Gold.	Prices of Export other than Specie and Gold.	
1902.	Variation, actual £	+ 220,864	—7,972,420	+ 1,970,471	—5,781,085
	Relative magnitude of variation. Total				
	variation taken as 100	+ 3.82	—137.90	+ 34.08	—100
	Variation, per cent.	+ 1.54	— 22.55	+ 7.20	—11.63
1903.	Variation, actual £	+ 4,060,926	—8,651,276	+ 3,144,290	—1,446,060
	Relative magnitude of variation. Total				
	variation taken as 100	+ 280.81	—598.25	+ 217.44	—100
	Variation, per cent.	+ 28.30	— 24.47	+ 11.78	—2.91
1904.	Variation, actual £	+ 2,566,915	+ 791,444	+ 4,431,384	+ 7,789,743
	Relative magnitude of variation. Total				
	variation taken as 100	+ 32.95	+ 10.16	+ 56.89	+ 100
	Variation, per cent.	+ 17.90	+ 2.24	+ 12.26	+ 15.67
1905.	Variation, actual £	—3,370,665	+ 3,116,814	+ 7,398,714	+ 7,144,863
	Relative magnitude of variation. Total				
	variation taken as 100	—47.18	+ 43.62	+ 103.56	+ 100
	Variation, per cent.	—23.48	+ 8.82	+ 19.24	+ 14.37
1906.	Variation, actual £	+ 2,547,283	+ 6,946,914	+ 10,547,394	+ 20,041,591
	Relative magnitude of variation. Total				
	variation taken as 100	+ 12.71	+ 34.66	+ 52.63	+ 100
	Variation, per cent.	+ 17.76	+ 19.65	+ 24.94	+ 40.32
1907.	Variation, actual £	—3,776,513	+ 12,208,745	+ 14,695,843	+ 23,128,075
	Relative magnitude of variation. Total				
	variation taken as 100	—16.32	+ 52.78	+ 63.54	+ 100
	Variation, per cent.	—26.32	+ 34.55	+ 30.90	+ 46.56
1908.	Variation, actual £	—739,245	+ 7,724,413	+ 7,629,718	+ 14,614,886
	Relative magnitude of variation. Total				
	variation taken as 100	— 5.06	+ 52.85	+ 52.21	+ 100
	Variation, per cent.	— 5.15	+ 21.85	+ 17.72	+ 29.43
1909.	Variation, actual £	—5,957,400	+ 11,624,804	+ 9,955,260	+ 15,622,664
	Relative magnitude of variation. Total				
	variation taken as 100	—38.13	+ 74.40	+ 63.73	+ 100
	Variation, per cent.	—41.52	+ 32.89	+ 21.19	+ 31.43
1910.	Variation, actual £	—10,169,679	+ 21,222,912	+ 13,741,745	+ 24,794,978
	Relative magnitude of variation. Total				
	variation taken as 100	—41.01	+ 85.59	+ 55.42	+ 100
	Variation, per cent.	—70.88	+ 60.04	+ 24.32	+ 49.90
1911.	Variation, actual £	—2,786,137	+ 22,756,348	+ 9,815,875	+ 29,786,086
	Relative magnitude of variation. Total				
	variation taken as 100	— 9.35	+ 73.40	+ 32.95	+ 100
	Variation, per cent.	—19.42	+ 64.37	+ 16.89	+ 59.95
1912.	Variation, actual £	—2,466,560	+ 17,827,140	+ 14,039,338	+ 29,399,918
	Relative magnitude of variation. Total				
	variation taken as 100	— 8.39	+ 60.64	+ 47.75	+ 100
	Variation, per cent.	—17.19	+ 50.43	+ 26.40	+ 59.16

§ 10. External Trade of Australia and other Countries.

1. **Essentials of Comparisons.**—Direct comparisons of the external trade of any two countries are possible only when the general conditions prevailing therein, and the scheme of record, are sensibly identical. For example, in regard to the mere matter of record, it may be observed that in one country the value of imports may be the value at the port of shipment, while in another the cost of freight, insurance, and charges may be added thereto. Or again, the values of imports and exports in the one may be declared by merchants, whereas in the other they may be the official prices, fixed from time to time by a commission constituted for the purpose. The figures relating to the external trade of any country are also affected in varying degree by the extent to which they include transit or re-export trade. Including bullion and specie, the transit trade of Belgium, for example, represents approximately 40 per cent. of the gross trade recorded; of Switzerland, 45 per cent.; of France, 20 per cent.; and of the United

Kingdom, 15 per cent.; whereas in Australia the same element represents only 4 per cent., and in New Zealand even less.

2. **"Special Trade" of Various Countries.**—Special trade may be defined, agreeably to the practice of the British Board of Trade, as (a) imports entered for consumption in the country (as distinguished from imports for transshipment or re-export) and (b) exports of domestic products.

In the following table the figures relate, as nearly as is possible, to imports entered for consumption in the various countries quoted, and to exports of their domestic products. It is to be noted, however, that these figures do not unequivocally denote the same thing throughout, since, in the United Kingdom and other manufacturing countries, raw or partly manufactured materials are imported as for home consumption, and, after undergoing some process of manufacture or further modification, are re-exported as domestic production, and further, the statistical records of many countries do not distinguish between bullion and specie imported for the use of the particular country (home consumption) and the amount in transit, nor between the exports of that produced within the country and that re-exported. Nevertheless, a comparison of this character reveals approximately the extent of the external trade which otherwise would not be manifest.

From the following table it may be seen that, for the particular years indicated, the value of the total trade per inhabitant was greatest in Belgium (£44 8s. 1d. per head); the next country in order of value per inhabitant was New Zealand (£40 14s. 3d. per head), followed by Switzerland (£33 1s. 6d. per head). Australia comes fourth (£31 10s. 9d. per head), and is considerably in advance of the next country, viz., Denmark (£23 9s. 2d. per head):—

TRADE OF VARIOUS COUNTRIES (IMPORTS FOR HOME CONSUMPTION AND EXPORTS OF DOMESTIC PRODUCTS, INCLUDING BULLION AND SPECIE), FOR LATEST AVAILABLE YEAR.

Country.	Year ended.	Trade.			Trade per Inhabitant.		
		Imports.	Exports.	Total.	Im-ports.	Ex-ports.	Total
		£	£	£	£ s. d.	£ s. d.	£ s. d.
C'WEALTH OF AUSTRALIA*	31/12/13	76,323,000	75,113,000	151,436,000	15 17 11	15 12 10	31 10 9
	31/12/12	74,943,000	75,962,000	150,905,000	16 2 8	16 7 1	32 9 9
United Kingdom*	31/12/13	671,265,000	525,461,000	1,196,726,000	14 11 8	11 8 4	26 0 0
	31/12/12	657,498,637	487,223,439	1,124,722,076	13 19 3	10 13 5	24 12 8
Canada ...	31/3/12	117,899,000	60,463,000	178,362,000	16 3 10	8 7 6	24 11 4
New Zealand ...	31/12/12	20,478,398	21,272,405	41,750,803	19 19 5	20 14 10	40 14 3
United States of America	30/6/13	342,106,000	436,547,000	778,653,000	3 12 11	4 13 1	8 6 0
Argentina Republic ...	31/12/11	75,915,000	65,542,000	141,457,000	12 4 1	10 10 9	22 14 10
Austria-Hungary ...	"	134,714,000	105,717,000	240,431,000	2 14 1	2 2 5	4 16 6
Belgium ...	"	187,755,000	144,842,000	332,597,000	25 1 4	19 6 9	44 8 1
Brazil ...	"	52,945,000	66,839,000	119,784,000	2 5 10	2 17 10	5 3 8
Denmark ...	"	34,989,000	30,036,000	65,025,000	12 12 6	10 16 8	23 9 2
France ...	"	341,126,000	254,477,000	595,603,000	8 12 3	6 8 6	15 0 9
German Empire ...	"	492,026,000	404,366,000	896,392,000	7 9 10	6 3 2	13 13 0
Italy ...	"	135,480,000	88,456,000	223,936,000	3 18 2	2 11 0	6 9 2
Japan ...	"	54,537,000	49,060,000	103,597,000	10 11 7	9 10 4	20 1 11
Norway ...	"	25,778,000	16,080,000	41,858,000	10 13 9	6 13 4	17 7 1
Portugal ...	"	15,544,000	7,759,000	23,303,000	2 17 7	1 8 9	4 6 4
Spain ...	"	39,795,000	39,057,000	78,852,000	2 0 7	1 19 10	4 0 5
Sweden ...	"	36,701,000	36,865,000	73,566,000	6 19 2	6 12 7	13 11 9
Switzerland ...	"	73,754,000	51,554,000	125,308,000	19 9 4	13 12 2	33 1 6
Uruguay ...	31/12/10	8,573,000	8,546,000	17,119,000	7 9 1	7 8 8	14 17 9

* Preliminary figures.

3. **External Trade as a Measure of Prosperity.**—External trade is not necessarily a measure of the prosperity of a country. Comparisons can be accepted as furnishing satisfactory indications of the relative progress or welfare of different countries, only when taken together with all other facts that should be considered in this connection. It is, for example, obvious that the external trade of a community depends not only upon the aggregate of its requirements, but also upon the extent to which it fails to supply requirements from its own resources. A community largely self-contained, for example, may have but a small external trade per head, and yet, by virtue of its capacity to produce and manufacture its own raw material, may actually enjoy greater prosperity and a higher standard of living than another country whose external trade per head is

much greater. The same observation applies equally to comparisons of the trade of the same country at different periods. A young country, the industries and export trade of which are mainly connected with raw or natural products, may, for example, through internal development, find the growth of its external trade diminishing per head of population without necessarily suffering any real diminution in the well-being of its people. And it is further obvious that circumstances may arise when enlargement of both imports and exports is actually a consequence of temporary economic difficulties. For example, in 1903, owing to shortage in the local supply, it became necessary to import wheat and flour into Australia to the value of £2,556,968, and to meet the charges for this by equivalent exports, the effect, considered *per se*, being to enlarge both. In this case the increase is not an evidence of prosperity.

4. **Australian Trade Evidence of Prosperity.**—Despite the above suggestions regarding the necessity of caution so as to avoid hasty inferences based upon aggregate trade, a consideration of its general characteristics over a number of years, and of its marked development, will suffice to shew that Australian affairs are progressing favourably.

§ 11. Trade of the United Kingdom with Australia.

1. **Proportion of Trade from United Kingdom.**—The percentages given in the following table shew the proportions of the imports into Australia from the United Kingdom, and from other countries mentioned, during each of the years 1886 to 1912:—

PROPORTION OF COMMONWEALTH IMPORT TRADE FROM VARIOUS COUNTRIES,
1886 to 1912.

Year.	Percentage Proportions from—					Year.	Percentage Proportions from—				
	United K'dom	British Poss'ns	Germ'y	United States.	Total Foreign C'tries.		United K'dom	British Poss'ns.	Germ'y.	United States.	Total Foreign C'tries.
1886	73.37	11.23	2.05	6.11	15.40	1900	61.28	11.28	6.54	12.16	27.44
1887	72.26	12.50	2.28	5.37	15.24	1901	59.47	11.22	6.59	13.80	29.31
1888	71.62	12.03	2.71	6.48	16.35	1902	58.64	13.22	6.53	12.27	28.14
1889	68.98	13.45	3.65	6.67	17.57	1903	52.51	13.17	6.24	16.84	34.32
1890	68.08	12.66	4.77	6.54	19.26	1904	60.68	12.22	7.17	12.40	27.10
1891	70.15	11.40	4.53	6.79	18.45	1905	60.17	14.04	6.42	11.70	25.79
1892	70.74	11.37	4.32	6.04	17.89	1906	59.39	15.09	7.16	10.36	25.52
1893	72.78	12.14	3.40	4.98	15.08	1907	61.59	12.93	6.85	11.33	25.48
1894	71.92	11.96	3.78	5.39	16.12	1908	60.10	12.83	7.05	12.13	27.07
1895	71.62	11.46	4.42	5.95	16.92	1909	60.92	13.45	6.51	9.78	25.63
1896	68.28	10.74	5.31	8.59	20.98	1910	61.06	13.11	6.30	10.82	25.83
1897	66.22	10.72	5.75	10.10	23.06	1911	58.98	12.86	6.63	11.57	28.16
1898	66.62	10.88	5.86	10.16	22.50	1912	58.76	12.26	6.58	12.09	28.98
1899	61.85	11.75	6.07	13.00	26.40						

In order to draw accurate conclusions from the above table, however, special attention must be given to the nature of imports from the United States, since the imports from that country have in some years been increased by imports of breadstuffs, a trade in which the United Kingdom could not participate. The years affected by the imports of breadstuffs were 1886, 1889, 1896, 1897, and 1903. Increased imports of such items as kerosene oil and timber also tend to increase the proportion of imports from the United States without any prejudicial effect on the trade of the United Kingdom. Similar modification is not necessary in regard to Germany, as the nature of the imports from that country is substantially the same as from the United Kingdom.

It has already been pointed out in this chapter that, prior to the year 1905, imports into the Commonwealth were recorded only against the country whence they were directly imported. Although the values of direct imports do not afford satisfactory data, it is necessary for any comparison extending further back than 1905 to use such figures. These figures are unsatisfactory on account of the varying proportions of indirect trade.

In order to furnish a comparison free from the influence of such trade as, from its nature, is not open to the United Kingdom, the following table, shewing the direct imports during the years 1886, 1906, 1911 and 1912 of the principal classes of goods which enter largely into the trade of the countries named, has been prepared. It may be mentioned that the imports for the year 1886 were extracted from the "Statistical Registers" of the

several States for a comparison—published in a previous issue—with the year 1906, and as their compilation involved a large amount of labour they are again utilised for comparison with the later years.

PRINCIPAL DIRECT IMPORTS INTO THE COMMONWEALTH FROM THE UNITED KINGDOM, GERMANY, AND THE UNITED STATES, 1886, 1906, 1911 and 1912.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries.
		£	£	£	£
Foodstuffs of animal origin. ...	1886	348,950	5,603	70,959	674,296
	1906	293,950	24,319	146,781	697,830
	1911	326,971	51,585	206,267	816,915
	1912	366,358	69,208	306,072	1,037,692
Alcoholic liquors ...	1886	1,801,200	82,185	82,730	2,126,877
	1906	1,053,154	109,426	24,367	1,888,671
	1911	1,446,351	181,730	17,110	1,920,824
	1912	1,507,929	236,691	15,447	2,022,986
Apparel, textiles, etc. (incl. boots)	1886	9,845,182	54,350	15,336	10,816,989
	1906	11,066,201	418,776	221,362	13,508,844
	1911	14,794,080	489,784	354,612	17,840,496
	1912	16,123,368	648,695	459,674	19,495,762
Metals unmanufactured and partly manufactured* ...	1886	403,809	2,241	...	430,950
	1906	696,331	62,945	34,927	927,785
	1911	916,297	70,042	57,819	1,455,764
	1912	1,212,737	113,256	72,008	1,780,125
Manufactures of metals (including machinery) ...	1886	4,616,924	94,832	311,342	5,190,901
	1906	5,144,912	926,314	1,379,662	7,932,675
	1911	8,965,810	1,218,431	2,838,516	14,211,581
	1912	11,236,241	1,322,872	3,111,429	16,985,089
Paper and stationery ...	1886	1,260,531	21,038	39,700	1,340,627
	1906	1,207,729	261,684	288,509	1,838,474
	1911	1,871,746	312,329	209,429	2,831,808
	1912	1,970,405	307,361	264,148	3,116,215
Jewellery, timepieces, fancy goods	1886	659,833	24,206	57,477	789,127
	1906	740,850	140,950	59,151	1,045,164
	1911	1,147,546	250,876	113,323	1,755,583
	1912	1,282,434	205,896	127,795	1,873,917
Earthenware, cements, etc. ...	1886	755,907	78,762	24,711	938,476
	1906	316,252	227,390	37,344	688,510
	1911	600,210	330,490	54,139	1,228,122
	1912	667,301	407,335	67,597	1,445,090
Drugs, chemicals, fertilisers, etc.	1886	511,216	8,660	33,382	766,243
	1906	887,325	193,615	82,789	1,732,543
	1911	915,588	189,458	99,587	2,178,600
	1912	968,579	213,182	111,630	2,394,162
Leather, and mfs. thereof (excluding boots) and substitutes therefor, including indiarubber ...	1886	285,601	6,357	53,588	363,332
	1906	682,238	70,028	116,356	924,968
	1911	1,053,858	188,249	152,726	1,586,503
	1912	1,090,717	212,068	254,708	1,788,272
Total above-mentioned imports ...	1886	20,489,153	378,234	689,225	22,937,818
	1906	22,088,942	2,435,447	2,391,248	30,685,464
	1908	24,558,163	2,638,279	3,044,691	34,444,436
	1909	25,650,092	2,507,669	2,511,450	35,275,485
	1910	29,641,027	2,983,216	3,366,814	41,660,324
	1911	32,038,457	3,282,974	4,103,528	45,826,196
Total imports (less bullion and specie) ...	1912	36,426,069	3,736,564	4,790,508	51,939,310
	1886	24,974,939	699,075	2,087,213	33,885,284
	1906	26,437,768	3,202,990	4,633,331	42,413,995
	1908	29,703,021	3,508,845	6,039,499	48,608,921
	1909	31,129,940	3,329,641	5,002,923	50,115,521
	1910	36,273,169	3,777,669	6,494,588	58,682,391
	1911	39,145,829	4,427,153	7,747,470	64,934,538
	1912	45,630,869	5,134,594	9,448,643	76,483,360

* Mainly pig iron and bar and rod iron.

PERCENTAGE ON TOTAL COMMONWEALTH IMPORTS OF PRINCIPAL *DIRECT* IMPORTS FROM UNITED KINGDOM, GERMANY, AND UNITED STATES, 1886, 1906, 1911 and 1912.

Nature of Imports.	Year.	United Kingdom.	Germany.	United States.	All Countries
Foodstuffs of animal origin ...	1886	51.75	0.83	10.52	100
	1906	42.12	3.48	21.02	100
	1911	40.02	6.31	25.25	100
	1912	35.30	6.38	29.49	100
Alcoholic liquors ...	1886	84.69	3.86	3.89	100
	1906	75.84	7.88	1.75	100
	1911	75.30	9.46	0.89	100
	1912	74.54	11.70	0.76	100
Apparel, textiles, etc. (including boots)	1886	95.44	0.53	0.15	100
	1906	81.93	3.10	1.64	100
	1911	82.93	2.75	1.99	100
	1912	82.70	3.33	2.36	100
Metals unmanufactured and partly manufactured ...	1886	93.72	0.52	—	100
	1906	75.06	6.78	3.76	100
	1911	62.95	4.81	3.97	100
	1912	68.13	6.36	4.04	100
Manufactures of metals ...	1886	88.93	1.83	6.00	100
	1906	64.85	11.68	17.39	100
	1911	63.09	8.57	19.97	100
	1912	66.15	7.79	18.32	100
Paper and stationery ...	1886	94.03	1.57	2.96	100
	1906	65.69	14.23	15.69	100
	1911	66.10	11.03	7.39	100
	1912	63.24	9.86	8.48	100
Jewellery, timepieces, and fancy goods	1886	83.62	3.07	7.28	100
	1906	70.89	13.48	5.66	100
	1911	65.36	14.29	6.45	100
	1912	68.44	10.99	6.82	100
Earthenware, cements, etc. ...	1886	80.55	8.39	2.63	100
	1906	45.93	33.03	5.42	100
	1911	48.87	26.91	4.41	100
	1912	46.18	23.19	4.68	100
Drugs, chemicals, fertilisers, etc. ...	1886	66.71	1.13	4.36	100
	1906	51.22	11.18	4.78	100
	1911	42.02	8.70	4.57	100
	1912	40.46	8.90	4.66	100
Leather and mfs. thereof, and substitutes therefor, including indiarubber	1886	78.60	1.75	15.30	100
	1906	73.75	7.60	12.58	100
	1911	66.42	11.86	9.63	100
	1912	61.00	11.86	14.24	100
Total above-mentioned imports ...	1886	89.31	1.65	3.01	100
	1906	71.98	7.94	7.79	100
	1908	71.29	7.66	8.84	100
	1909	72.70	7.10	7.12	100
	1910	71.04	6.91	8.07	100
	1911	69.91	7.16	8.95	100
	1912	68.20	7.19	9.22	100
Total imports (less bullion and specie)	1886	73.71	2.06	6.16	100
	1906	62.34	7.55	10.92	100
	1908	61.11	7.32	12.42	100
	1909	62.10	6.64	9.98	100
	1910	61.82	6.44	11.07	100
	1911	60.28	6.82	11.93	100
	1912	59.66	6.71	12.35	100

The foregoing table shews that the share of the United Kingdom, as indicated by the records according to "Country of Shipment," in the trade of those classes of goods enumerated—representing over 70 per cent. of the total imports from that country—has declined from 89.31 per cent. of the whole in 1886 to 68.20 per cent. in 1912. The value of these imports from the United Kingdom has increased from £20,489,153 in 1886 to only £35,426,069 in 1912, or by 72.90 per cent., while the total value of similar imports

has increased from £22,937,818 to £51,939,310, or by 126.45 per cent. Had the same proportion of the total trade been shipped from the United Kingdom during 1912 as in 1886 it would have represented £46,394,669 instead of £35,426,069.

The following table gives an analysis of the imports during the years 1908-1912 according to the countries of origin of the goods, and has been extended to include the products of Belgium and France. (See subsequent section dealing with "Preference.")

IMPORTS INTO THE COMMONWEALTH OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1908 TO 1912.

Nature of Imports.	Year.	United Kingdom.	Belgium	France.	Germany.	U.S. of America.	All Countries
		£	£	£	£	£	£
Foodstuffs of animal origin	1908	327,047	348	5,103	9,983	227,308	834,542
	1909	309,642	4,505	5,431	6,737	181,435	751,044
	1910	313,066	1,141	3,806	6,414	242,427	873,897
	1911	266,740	885	3,190	5,354	226,495	816,915
	1912	268,870	915	3,877	9,775	335,533	1,037,692
Alcoholic liquors, etc.	1908	1,007,600	914	281,529	77,379	18,182	1,575,151
	1909	956,882	1,637	250,042	80,283	13,053	1,406,952
	1910	1,052,003	1,502	287,106	95,039	17,330	1,654,237
	1911	1,138,158	327	443,587	112,004	22,758	1,930,824
	1912	1,323,859	1,185	290,159	157,668	21,542	2,022,986
Apparel (including boots), textiles, etc.	1908	8,791,471	131,317	786,394	1,252,337	349,885	13,814,687
	1909	9,231,968	155,078	857,808	1,299,041	355,768	14,765,738
	1910	10,896,368	204,370	864,808	1,446,075	429,517	17,438,605
	1911	11,462,927	235,317	861,323	1,608,348	515,906	17,840,496
	1912	12,514,286	255,796	932,798	1,923,217	619,944	19,495,762
Metals unmanufactured or partly manufactured, excluding gold and silver bullion	1908	665,128	62,685	3,995	130,627	61,026	976,307
	1909	667,327	73,495	2,447	116,017	50,015	971,616
	1910	821,626	125,752	2,882	198,946	44,993	1,206,300
	1911	928,172	150,203	2,616	230,150	58,891	1,519,133
	1912	1,317,280	144,362	812	251,710	74,146	1,780,125
Manufactures of metals	1908	6,550,743	148,692	44,185	1,142,443	1,938,008	10,171,607
	1909	6,786,806	137,710	47,947	1,190,998	1,732,858	10,372,019
	1910	7,491,624	159,095	48,528	1,369,378	2,460,278	12,074,821
	1911	8,507,499	281,070	57,977	1,724,344	3,029,091	14,211,581
	1912	10,813,092	315,134	67,850	1,808,054	3,340,959	16,985,089
Paper and stationery	1908	1,217,008	31,923	13,656	310,006	292,426	2,234,930
	1909	1,250,166	23,800	14,889	296,970	231,215	2,098,638
	1910	1,448,938	31,726	17,974	248,102	275,181	2,457,216
	1911	1,651,715	39,638	23,148	311,030	303,015	2,831,808
	1912	1,748,338	37,073	24,657	293,233	367,264	3,116,215
Jewellery, timepieces and fancy goods	1908	418,400	49,428	127,831	210,814	87,201	1,102,644
	1909	482,473	38,396	107,915	227,625	97,125	1,203,528
	1910	526,605	49,971	117,831	261,226	140,611	1,428,029
	1911	611,355	63,389	151,788	323,482	202,772	1,755,583
	1912	624,911	35,104	163,776	294,433	234,559	1,873,917
Earthenware, cements, glass, etc.	1908	411,913	103,776	26,918	215,293	40,923	855,855
	1909	378,049	119,633	27,312	176,082	41,866	791,705
	1910	492,842	136,138	31,213	234,074	61,123	1,015,313
	1911	553,817	180,445	35,594	318,258	60,043	1,228,122
	1912	617,470	212,208	34,366	413,322	71,236	1,445,090
Drugs, chemicals, fertilisers	1908	819,949	12,034	224,398	161,594	132,406	1,916,680
	1909	735,854	9,847	173,753	168,590	132,596	1,744,023
	1910	939,349	18,767	177,839	185,794	140,957	2,186,005
	1911	896,921	8,390	233,370	212,045	152,413	2,178,600
	1912	929,142	7,803	252,358	235,903	172,070	2,394,162
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1908	367,839	202	49,534	145,461	227,260	932,033
	1909	383,930	551	54,079	210,307	294,128	1,080,222
	1910	490,154	1,573	64,407	189,660	306,363	1,303,134
	1911	544,583	7,261	57,172	257,117	323,825	1,586,503
	1912	574,325	6,276	71,588	306,297	473,379	1,788,272
Total above-mentioned imports	1908	20,577,098	541,319	1,563,543	3,655,937	3,374,630	34,444,436
	1909	21,183,097	564,652	1,541,623	3,712,650	3,130,059	35,275,485
	1910	24,472,575	730,035	1,616,394	4,234,708	4,118,780	41,727,366
	1911	26,561,887	971,925	1,868,774	5,106,062	4,894,909	45,889,565
	1912	30,631,573	1,015,856	1,842,171	5,693,662	5,710,632	51,939,310
Total imports (less bullion and specie)	1908	25,042,810	636,450	1,775,389	4,482,119	6,574,380	48,608,921
	1909	25,809,347	662,132	1,784,312	4,537,112	5,934,295	0,115,521
	1910	30,048,714	853,708	1,949,735	5,214,149	7,658,878	58,682,391
	1911	32,365,588	1,141,075	2,268,692	6,363,248	9,007,065	64,997,907
	1912	38,589,434	1,192,034	2,293,291	7,153,543	10,763,615	76,483,360

NOTE.—1905 figures were last shown in No. 3, 1906 figures in No. 5, and 1907 figures in No. 6 Year Book.

† Mainly pig iron and bar and rod iron.

In the above table, the totals only of the several classes of goods mentioned have been dealt with. On pages 557 *et seq.* will be found a more detailed analysis, shewing the principal items of United Kingdom origin, in which goods favoured by preferential tariff rates are distinguished from other imports.

COMMONWEALTH PERCENTAGE ON TOTAL IMPORTS, OF IMPORTS OF PRODUCTS OR MANUFACTURES OF THE UNITED KINGDOM, BELGIUM, FRANCE, GERMANY, AND THE UNITED STATES OF AMERICA DURING THE YEARS 1908 to 1912.

Nature of Imports.	Year.	United Kingdom.	Belgium.	France.	Germany.	U.S.A.	All Countries
Foodstuffs of animal origin	1908	39.19	0.04	0.61	1.20	27.25	100
	1909	41.23	0.60	0.72	0.90	24.16	100
	1910	35.83	0.14	0.44	0.73	27.75	100
	1911	32.65	0.11	0.39	1.02	27.73	100
	1912	25.92	0.98	0.37	0.94	32.34	100
Alcoholic liquors, etc. ...	1908	63.96	0.05	17.82	4.91	1.15	100
	1909	63.92	0.11	16.71	5.36	0.87	100
	1910	63.59	0.09	17.36	5.75	1.05	100
	1911	59.25	0.02	23.09	5.88	1.18	100
	1912	65.42	0.06	14.64	7.79	1.07	100
Apparel (including boots), textiles, etc. ...	1908	63.56	0.95	5.68	9.04	2.53	100
	1909	62.53	1.05	5.81	8.80	2.41	100
	1910	62.48	1.17	4.96	8.29	2.46	100
	1911	64.25	1.31	4.83	9.02	2.89	100
	1912	64.19	1.31	4.79	9.87	3.18	100
Metals unmanufactured or partly manufactured, excluding gold and silver bullion ...	1908	68.20	6.42	0.41	13.38	6.25	100
	1909	68.68	7.56	0.25	11.94	3.15	100
	1910	63.38	9.70	0.22	15.35	3.47	100
	1911	61.10	9.89	0.17	15.15	3.86	100
	1912	68.38	8.11	0.05	14.14	4.15	100
Manufactures of metals ...	1908	64.40	1.46	0.43	11.23	19.05	100
	1909	65.43	1.38	0.46	11.48	16.71	100
	1910	62.04	1.32	0.40	11.34	20.37	100
	1911	59.87	1.98	0.41	12.14	21.32	100
	1912	63.68	1.86	0.40	10.64	19.67	100
Paper and stationery ...	1908	54.45	1.43	0.61	13.87	13.08	100
	1909	59.97	1.13	0.71	11.29	11.02	100
	1910	58.96	1.29	0.73	10.10	11.20	100
	1911	58.33	1.40	0.78	10.99	10.70	100
	1912	56.05	1.19	0.79	9.47	11.79	100
Jewellery, timepieces, and fancy goods ...	1908	37.95	4.48	11.59	19.12	7.91	100
	1909	40.09	3.19	8.97	18.92	8.07	100
	1910	36.88	3.50	8.25	18.29	9.85	100
	1911	34.83	3.90	8.64	18.44	11.55	100
	1912	33.35	1.87	8.74	15.71	12.51	100
Earthenware, cements, glass, etc. ...	1908	48.09	12.13	3.15	25.16	4.78	100
	1909	47.75	15.11	3.45	22.24	5.29	100
	1910	48.54	13.41	3.07	23.05	6.02	100
	1911	45.09	14.69	2.90	25.91	4.88	100
	1912	42.73	14.69	2.38	28.61	4.93	100
Drugs, chemicals, and fertilisers ...	1908	42.78	0.62	11.71	8.43	6.91	100
	1909	42.20	0.56	9.96	9.67	7.60	100
	1910	42.97	0.86	8.14	8.50	6.45	100
	1911	41.18	0.38	10.71	9.73	6.99	100
	1912	38.81	0.03	10.54	9.85	7.19	100
Leather and manufactures thereof and substitutes therefor, including india-rubber (excluding boots)	1908	39.47	0.02	5.31	15.51	24.39	100
	1909	35.55	0.05	5.01	19.47	27.23	100
	1910	37.61	0.12	4.94	14.56	23.51	100
	1911	34.32	0.45	3.60	16.21	20.41	100
	1912	32.12	0.35	4.01	17.13	26.50	100
Total above-mentioned articles ...	1908	59.74	1.57	4.54	10.61	9.80	100
	1909	60.05	1.60	4.37	10.52	8.87	100
	1910	58.65	1.75	3.87	10.15	9.87	100
	1911	57.88	2.12	4.07	11.13	10.67	100
	1912	58.98	1.96	3.55	10.94	10.99	100
Total imports...	1908	51.52	1.31	3.65	9.22	13.54	100
	1909	51.50	1.32	3.56	9.05	11.84	100
	1910	51.21	1.45	3.32	8.89	13.05	100
	1911	49.80	1.75	3.49	9.79	13.68	100
	1912	50.45	1.56	3.00	9.36	14.07	100

A comparison of the results given in the immediately preceding tables with those given on pages 548 and 549 discloses the value of the export trade of other countries which reaches the Commonwealth through the United Kingdom.

2. Preferential Tariff.—The Tariff Act of 1908, at present in force, provides preferential tariff rates in favour of goods produced or manufactured in the United Kingdom. On the introduction of the preferential treatment of British goods, it was required that British material or labour should represent not less than one-fourth the value of such goods. From the 1st September, 1911, it has been required, in regard to goods only partially manufactured in the United Kingdom, that the final process or processes of manufacture shall have been performed in the United Kingdom, and that the expenditure in material of British production and/or British labour shall have been not less than one-fourth of the factory or works' cost of the goods in the finished state.

In the analyses given in this section the results shewn are those obtained by applying the tariff rates to the imports of the year, whether entered for consumption or re-exported. The re-exports are, however, relatively small.

The following table presents an analysis of the imports during 1912, distinguishing those affected—favourably or adversely—by the preferential provisions of the tariff, from those not affected:—

COMMONWEALTH IMPORTS, 1912, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	Country of Origin.			
	United Kingdom.	British Possessions.	Foreign Countries.	Total.
Imports affected by preferential tariff	£	£	£	£
Free	7,585,466	—	—	7,585,466
Dutiable	17,718,085	432,978	14,412,279	32,563,342
Total	25,303,551	432,978	14,412,279	40,148,808
Impts. not affected by preferential tariff				
Free	9,400,476	4,054,931	8,310,768	21,766,175
Dutiable	3,885,407	3,041,626	7,641,344	14,568,377
Total	13,285,883	7,096,557	15,952,112	36,334,552
Total merchandise	38,589,434	7,529,535	30,364,391	76,483,360
Bullion and specie	535,395	1,123,238	16,607	1,675,240
Total imports	39,124,829	8,652,773	30,380,998	78,158,600

Of the total imports of merchandise (£76,483,360), £40,148,808, or 52.49 per cent., would be affected by the preferential tariff.

The imports during 1912 of United Kingdom origin, favoured by preference, amounted to £25,303,551, representing 65.57 per cent. of the total imports of merchandise from that country, against £21,118,057 (65.24 per cent.) during 1911. Under the preferential

tariff these imports would be subject to duty equivalent to an average *ad valorem* rate of 13.68 per cent., as compared with an average rate of 18.72 per cent. which the same goods would be required to pay under the general tariff rates—an advantage of £1,274,657 in the amount of duty. The actual amount of rebate allowed on United Kingdom goods entered for home consumption during 1912, under the varying rates of duty, was £1,265,684.

The following tables give the comparative results of an application of the preferential tariff rates and the general tariff rates to the imports from the United Kingdom, British Possessions and foreign countries respectively:—

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM UNITED KINGDOM.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	7,585,466	...	...	390,556	5.15
(B) Dutiable	17,718,085	3,462,359	19.54	4,346,460	24.53
Total	25,303,551	3,462,359	13.68	4,737,016	18.72

IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES.

FROM BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	168,130	8,406	5.00	...	...
" " " B "	264,848	80,241	30.30	65,860	24.87
Total	492,978	88,647	20.48	65,860	15.21

FROM FOREIGN COUNTRIES.

	£	£	Rate %	£	Rate %
Imports similar to group A above	2,402,828	121,176	5.04	...	...
" " " B "	12,009,451	2,985,531	24.86	2,341,609	19.50
Total	14,412,279	3,106,707	21.56	2,341,609	16.25

The proportion of the imports from British Possessions adversely affected by the preference to the United Kingdom is relatively small, representing only 5.75 per cent. of the imports of merchandise from those countries. The surcharge of duty on imports from British Possessions during 1912 amounted to £22,787 as against £14,857, in 1911. The sum of £22,787 would, on the basis of the trade of 1912, represent the loss of revenue involved in an extension of the preference given to the United Kingdom to the

rest of the Empire, as in the preferential scheme of New Zealand. The British Possessions chiefly affected are India, Canada, Straits Settlements, and New Zealand.

The surcharge on imports, affected by preference, from foreign countries during 1912 would amount to £765,098, as against £642,038 during 1911.

3. Effect of Preference.—It may again be mentioned here that the system of recording imports according to "country of origin," was introduced only from the beginning of 1905, and it is evident that in the earlier period of its operation, some goods, imported through the United Kingdom, were wrongly described as of United Kingdom origin. Particular instances in which manufactures of foreign countries have obviously been credited to the United Kingdom are alluded to later. When the question of revenue became involved, and a more exact description of the goods was insisted upon, goods which might formerly have been accepted and recorded as British would be correctly classed as foreign.

A comparison of the returns of the British Board of Trade (shewing the exports of produce or manufacture of the United Kingdom to Australia) with the import returns of the Commonwealth, supports the belief that the proportion of the trade credited to the United Kingdom in this country during the years 1905 and 1906 is too high. If this supposition be correct, the apparent decline in the proportion of British goods, as compared with the years mentioned, indicated by the Commonwealth records, is somewhat misleading.

In regard to imports of United Kingdom origin, it has been shewn in previous issues that, while the results for the later years are in substantial agreement, those ascertained from the Commonwealth import returns for 1905 are 8.35 per cent. above those ascertained from the returns of the British Board of Trade.

If it be conceded that the figures of the British Board of Trade for 1905 and 1906 with 10 per cent. added are nearer the truth than the Commonwealth records for those years, and in the subsequent years the Commonwealth figures be accepted, the results would be approximately as follows:—

IMPORTS OF UNITED KINGDOM ORIGIN, 1905 to 1912.

Year.	Preferential Imports.		Non-Preferential Imports.*		Total.*	
	Value.	Per cent. on Total Pref. Imports.	Value.	Per cent. on Total Non-Pref. Imports.	Value.	Per cent. on Total Imports.
	£	%	£	%	£	%
1905†	12,220,000	63.98	6,321,000	48.18	18,541,000	57.55
1906†	14,316,000	66.80	7,774,000	50.02	22,090,000	59.74
1907	17,049,000	66.08	9,224,000	51.12	26,273,000	59.93
1908	15,896,000	65.70	9,007,000	50.70	24,903,000	59.36
1909	16,482,000	66.80	9,137,000	49.94	25,619,000	59.61
1910	19,049,000	65.88	10,821,000	48.37	29,870,000	58.23
1911	21,118,000	63.58	10,957,000	46.81	32,075,000	56.66
1912	25,304,000	63.02	12,963,000	50.27	38,267,000	58.04

* See note (*) to second table on following page. † The figures for these years are based on export returns of the United Kingdom.

From this table it will be observed that instead of declining rapidly since 1905, as indicated by the Commonwealth records, the position of the United Kingdom has been, on the whole, well maintained up to and including the year 1910. The records for 1911, and 1912, however, shew a very pronounced decline in the preferential group, as com-

pared with the immediately preceding years, while in the non-preferential group a very substantial improvement is apparent.

The effect of industrial troubles in the United Kingdom during 1911 on her relative position in the Commonwealth import trade cannot, of course, be measured, but it is more than probable that it has been material. It is also possible that the revised definition of "origin" (see page 520) has had the apparent effect of reducing the value of United Kingdom goods and correspondingly increasing those of other countries.

The following comparative tables shew the proportion of imports—preferential and non-preferential, respectively—recorded in the Commonwealth as of United Kingdom origin during the years 1905-1912:—

PREFERENTIAL IMPORTS, 1905 to 1912.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905*	13,268,596	69.56	151,463	0.78	5,656,611	29.66	19,076,670	100
1906*	14,643,287	68.58	165,699	0.78	6,545,603	30.64	21,354,589	100
1907	17,049,196	66.08	210,545	0.82	8,539,885	33.10	25,799,626	100
1908	15,895,721	65.70	162,097	0.67	8,136,004	33.63	24,193,822	100
1909	16,482,032	66.80	319,900	1.29	7,875,832	31.91	24,677,764	100
1910	19,049,506	65.88	211,687	0.73	9,655,762	33.39	28,916,955	100
1911	21,118,057	63.58	268,511	0.81	11,825,659	35.61	33,212,227	100
1912	25,303,551	63.02	432,978	1.08	14,412,279	35.90	40,148,808	100

* See modified figures in the preceding table.

COMMONWEALTH NON-PREFERENTIAL IMPORTS,* 1905 to 1912.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905†	6,843,465	51.98	1,621,168	12.31	4,701,383	35.71	13,166,016	100
1906†	7,952,039	50.81	2,017,296	12.89	5,680,078	36.30	15,649,413	100
1907	9,223,549	51.12	2,277,889	12.64	6,543,733	36.24	18,045,171	100
1908	9,006,821	50.70	2,299,775	12.95	6,456,040	36.35	17,762,636	100
1909	9,137,146	49.94	2,500,859	13.66	6,659,699	36.40	18,297,704	100
1910	10,820,679	48.37	3,526,523	15.76	8,025,977	35.87	22,373,179	100
1911	10,956,913	46.81	2,808,406	12.00	9,639,534	41.19	23,404,853	100
1912	12,962,899	50.27	2,919,446	11.33	9,899,679	38.40	25,782,024	100

* In order to obtain a more satisfactory comparison only goods of a character similar to those affected by preferential rates have been included in this table. Articles such as fruits, grain, cocoa beans, raw coffee, tea, sugar, unmanufactured tobacco, hides, fibres, kerosene, timber, etc., which are not produced in the United Kingdom, have been excluded. The proportion of these goods recorded as of United Kingdom origin during 1912 was only 3.06 per cent.

† See modified figures in the first table on the preceding page.

The pronounced recovery of the United Kingdom, in the non-preferential group, in 1912 has been largely due to the larger imports of mercantile ships. In 1912 the imports of ships of United Kingdom origin were valued at £1,146,922 representing 92.59 per cent. of the total of such imports. If these ships be entirely omitted the share of the United Kingdom would be 46.45 per cent. in 1911, and 48.14 per cent. in 1912, instead of 46.81 per cent. and 50.27 per cent. respectively.

The principal classes of imports affected by preference are "apparel, textiles and manufactured fibres," and "manufactures of metals, including machinery." Together these two classes represented 65 per cent. of all imports affected by the preferential tariff during 1912, the former class representing 40 per cent. and the latter 25 per cent. The following analysis gives the particulars of the imports of these groups, as recorded, for the past eight years:—

COMMONWEALTH IMPORTS OF APPAREL, TEXTILES AND MANUFACTURED FIBRES, 1905 to 1912.

PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905* ...	7,586,841*	76.96*	42,442	0.42	2,228,104	22.60	9,857,387	100
1906* ...	8,240,338*	75.92*	59,402	0.55	2,554,765	23.53	10,854,505	100
1907 ...	8,725,908	70.20	68,764	0.54	3,637,169	29.26	12,431,841	100
1908 ...	7,716,900	68.35	54,667	0.48	3,519,641	31.17	11,291,108	100
1909 ...	8,038,772	69.26	58,599	0.50	3,509,876	30.24	11,607,247	100
1910 ...	9,511,026	70.31	55,662	0.41	3,960,627	29.28	13,527,315	100
1911 ...	10,022,798	70.06	68,030	0.48	4,214,179	29.46	14,305,007	100
1912 ...	11,052,015	69.11	85,524	0.54	4,853,825	30.35	15,991,364	100

NON-PREFERENTIAL.

Year.	£	%	£	%	£	%	£	%
1905* ...	903,653*	42.28*	971,931	45.47	261,815	12.25	2,137,399	100
1906* ...	1,045,608*	39.72*	1,251,056	47.53	335,389	12.75	2,632,053	100
1907 ...	1,153,666	39.66	1,327,829	45.64	427,325	14.70	2,908,820	100
1908 ...	1,074,671	42.08	1,168,473	45.76	310,435	12.16	2,553,579	100
1909 ...	1,193,196	37.77	1,380,056	43.70	585,239	18.53	3,158,491	100
1910 ...	1,385,342	35.42	1,798,895	45.99	727,053	18.59	3,911,290	100
1911 ...	1,440,129	40.73	1,330,974	37.65	764,386	21.62	3,535,489	100
1912 ...	1,462,271	41.72	1,242,937	35.47	799,191	22.81	3,504,398	100

* The amount credited to the United Kingdom in these years is considered to be in excess of the truth.

The large proportion of the trade in non-preferential textiles supplied by British Possessions is almost entirely composed of jute goods from India.

If the figures for 1905 and 1906 be ignored (on account of their doubtful accuracy) it will be seen from the above table, referring to preferential imports, that there has been little variation in the distribution of the textile trade as between the United Kingdom and foreign countries, and the same stability is maintained throughout the several lines shewn in the following detailed table.

The increasing share of this trade supplied by foreign countries is largely due to the increased imports of the following items:—Minor articles for apparel from Austria-Hungary and Germany; furs from Germany and Russia; cotton socks and stockings from Germany; canvas and duck from United States of America.

The detailed tables which are appended shew the relative proportions of the various classes of textile goods supplied by the United Kingdom. In regard to those textile goods affected by preference, the figures shew that since 1907 (the first year with which satisfactory comparisons can be made), the share of the United Kingdom has been substantially maintained in nearly all the lines enumerated below, the aggregate result being that in the year 1912 69.11 per cent. was supplied as against 70.20 per cent. in 1907.

The value and proportion of the more important items, included in the above groups of apparel and textiles, recorded as of United Kingdom manufacture, are given below:—

**COMMONWEALTH IMPORTS OF PREFERENTIAL ITEMS OF APPAREL AND TEXTILES
RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 and 1909-1912.**

Items.	1907.		1909.		1910.		1911.		1912.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£	%	£	%	£	%	£	%	£	%
Apparel—										
Boots and shoes ...	195,426	66.28	187,690	68.22	238,597	67.23	264,713	71.17	364,426	68.82
Gloves ...	48,168	17.07	49,148	16.75	31,659	10.78	29,133	8.31	41,653	9.63
Hats, caps, & bonnets	260,853	63.87	176,998	66.36	209,443	67.31	222,486	67.34	296,862	66.29
Socks and stockings of wool, &c. ...	348,307	97.23	367,669	95.73	412,359	95.47	490,318	95.35	509,427	92.05
Trimmings & Ornaments ...	86,317	25.73	49,130	31.30	46,547	25.85	53,762	11.58	80,091	13.41
Other apparel ...	1,040,855	67.28	906,615	66.90	1,044,336	66.08	1,158,403	64.21	1,573,017	65.58
Textiles, etc. — Piece goods — Cotton and linen, n.e.i. ...	3,266,665	89.90	3,208,581	88.71	3,986,739	88.36	3,925,997	86.66	4,016,831	86.30
Woolen or containing wool ...	1,849,153	80.62	1,595,809	81.18	1,815,245	84.57	1,960,760	85.68	2,053,861	85.32
Silk or containing silk (not containing wool) ...	106,008	11.73	89,534	10.31	115,003	12.19	142,257	13.81	128,100	12.74
Velvets, velveteens, plushes, ribbons, lace, etc. ...	235,214	27.67	278,786	25.48	274,450	22.52	300,520	34.69	363,003	34.45
Flannelettes ...	228,240	81.85	127,466	81.40	138,098	82.50	136,564	84.48	116,553	85.50
Other textiles & manufactured fibres ...	1,060,702	85.23	1,001,346	85.35	1,248,550	86.38	1,407,885	85.81	1,508,191	84.93
Total apparel & textiles	8,725,908	70.20	8,038,772	69.26	9,511,026	70.31	10,022,798	70.06	11,052,015	69.11

† In these years some ribbons, galloons, etc., previously included with Velvets, etc., have been transferred to Trimmings and Ornaments.

**COMMONWEALTH IMPORTS OF NON-PREFERENTIAL ITEMS OF APPAREL AND
TEXTILES RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 and 1909-1912.**

Items.	1907.		1909.		1910.		1911.		1912.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
	£		£		£		£		£	
Apparel—Socks & stockings of cotton ...	48,207	29.66	40,639	25.06	48,697	27.37	45,576	23.51	40,019	20.06
Other ...	97,228	76.00	56,474	48.50	57,612	47.71	76,671	48.27	45,109	39.93
Minor Articles for—										
Boots and shoes ...	33,340	56.73	31,735	60.87	35,044	51.80	34,875	53.82	33,776	49.45
Hats and caps ...	42,937	29.78	58,236	30.70	59,695	25.54	58,317	31.15	49,899	27.88
Umbrellas ...	20,902	96.26	32,456	96.24	40,211	93.87	32,969	91.97	29,420	95.70
Other apparel ...	153,600	65.83	156,040	48.38	171,461	44.55	178,218	43.25	172,945	40.90
Piece goods—Canvas & duck ...	107,792	89.05	164,095	90.97	212,779	89.62	237,353	89.42	277,182	86.99
Hessians ...	47,840	19.14	51,593	24.65	50,268	21.44	28,185	13.73	39,793	15.56
Other ...	69,551	79.28	84,222	74.92	114,352	69.18	115,434	68.04	122,353	66.52
Sewing silks, threads, etc	317,519	87.76	312,217	89.88	360,900	91.90	402,051	91.86	380,129	91.56
Tents and flags ...	4,147	91.49	3,816	96.58	12,734	98.30	10,608	95.28	2,091	46.96
Cordage and twine ...	200,030	90.03	196,241	84.43	215,371	90.81	208,690	85.37	256,896	87.18
Bags and sacks ...	10,573	0.95	5,432	0.45	6,218	0.39	11,182	0.97	3,659	0.36
Total ...	1,153,666	39.66	1,193,196	37.77	1,385,342	35.42	1,440,129	40.73	1,462,271	41.72

**COMMONWEALTH IMPORTS OF METALS AND MANUFACTURES OF METALS,
(INCLUDING MACHINERY), 1905 to 1912.**

PREFERENTIAL.

Year.	Country of Origin.							
	United Kingdom.		British Possessions.		Foreign Countries.		Total.	
	£	%	£	%	£	%	£	%
1905	2,690,043	72.77	13,597	0.37	993,252	26.86	3,696,892	100
1906	3,132,437	73.35	17,192	0.41	1,121,241	26.24	4,271,170	100
1907	4,401,531	75.73	25,926	0.45	1,384,530	23.82	5,811,987	100
1908	4,271,659	75.53	9,765	0.17	1,374,303	24.30	5,655,727	100
1909	4,517,994	76.95	144,933	2.47	1,208,538	20.58	5,871,465	100
1910	4,894,293	73.13	17,384	0.26	1,759,351	26.61	6,611,028	100
1911	5,675,023	70.72	17,360	0.22	2,332,527	29.06	8,024,910	100
1912	7,549,230	73.35	24,696	0.24	2,718,015	26.41	10,291,941	100

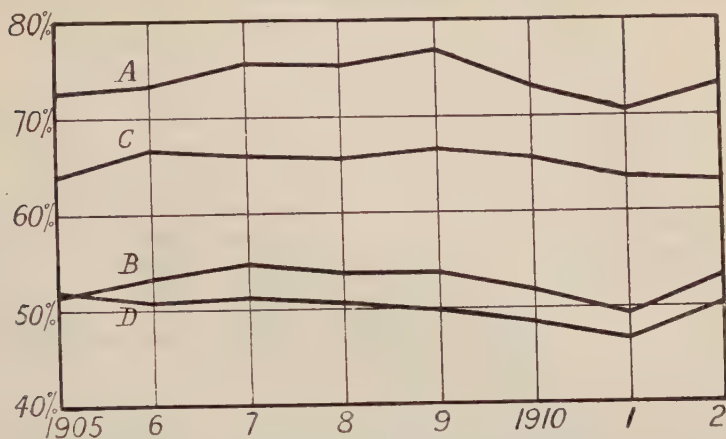
NON-PREFERENTIAL.

	£	%	£	%	£	%	£	%
1905	1,793,631	51.40	129,747	3.72	1,568,421	44.88	3,489,799	100
1906	2,416,705	53.22	92,979	2.05	2,080,556	44.73	4,540,239	100
1907	3,180,805	54.90	209,725	3.62	2,403,455	41.48	5,793,985	100
1908	2,942,084	53.85	189,632	3.47	2,532,039	42.68	5,463,755	100
1909	2,934,101	53.91	201,511	3.70	2,307,684	42.39	5,443,296	100
1910	3,478,432	51.90	325,299	4.85	2,898,362	43.25	6,702,093	100
1911	3,756,393	49.27	368,234	4.63	3,500,862	45.90	7,625,489	100
1912	4,479,489	53.24	342,190	4.07	3,592,577	42.69	8,414,256	100

In the metal trade, the position of the United Kingdom in both the preferential and non-preferential divisions, has been much improved as compared with 1911, when an unusually large proportion of this trade was supplied by Germany and the United States. It is probable, however, that the pronounced movements—in opposite directions—during the years 1911 and 1912 were, to some extent, a consequence of the dockers' strike in England, causing goods which should have been shipped in the earlier year to be held over till 1912.

The imports of metals and manufactures of metals afford the most satisfactory data available by which to measure the effects of preference, for the reasons that—(i.) the value of the trade is evenly divided between the preferential and non-preferential divisions, and (ii.) the goods in both groups are similar in character, and are, consequently, manufactured and distributed under similar conditions. It is, therefore, interesting to observe the general similarity between the variations of the proportions of the trade supplied by the United Kingdom in each of the two divisions of this group. It will be noticed that in each year the direction of the movement has been identical, and, although the degree of variation has not been the same year by year, the proportions supplied by the United Kingdom in 1912 were in both divisions identical with those of 1906, the figures being:—Preferential, 73.35, 73.35; non-preferential, 53.22, 53.24. These results are illustrated by the diagram.

PERCENTAGE PROPORTION OF IMPORTS SUPPLIED BY THE UNITED KINGDOM.



(A) Metal manufactures—preferential. (B) Metal manufactures—non-preferential.
(C) Total—preferential imports. (D) Total—non-preferential imports.

It is thus evident that the influences responsible for the fluctuations in the distribution of the trade have been common to both the preferential and non-preferential divisions, preferential tariff having had no differential effect in this important branch of trade.

COMMONWEALTH IMPORTS OF PRINCIPAL ITEMS OF METALS, Etc., INCLUDING
MACHINERY, RECORDED AS OF UNITED KINGDOM ORIGIN, 1907 and 1909-1912.

PREFERENTIAL.

Items.	1907.		1909.		1910.		1911.		1912.	
	Amount.		Amount.		Amount.		Amount.		Amount.	
	£	%	£	%	£	%	£	%	£	%
Iron & steel girders, beams, etc. ...	64,366	68.88	77,648	82.61	138,588	82.92	182,685	72.18	226,190	79.35
Plate & sheet (corrugated or galvd.)	1,279,440	94.36	1,375,433	95.36	1,590,746	92.37	1,677,259	94.18	1,905,802	92.79
Rails, fishplates, etc.	562,610	89.46	436,872	54.40	389,547	18.69	499,629	46.27	844,733	64.98
Tinned plates ...	247,650	99.55	284,446	99.91	355,395	99.99	486,311	100.00	504,257	97.94
	2,154,066	92.57	2,174,399	82.86	2,484,276	81.04	2,845,884	79.04	3,480,982	83.80
Machinery ...	775,673	62.15	1,015,163	77.06	691,224	63.46	946,182	64.42	1,579,833	65.03
Other manufactures of metals ...	1,471,792	65.80	1,328,432	69.02	1,658,793	67.53	1,882,957	63.71	2,488,415	67.10
	2,247,465	64.50	2,343,595	72.18	2,350,017	66.28	2,829,139	63.94	4,068,248	66.28
Total ...	4,401,531	75.73	4,517,994	76.95	4,834,293	73.13	5,675,023	70.72	7,549,230	73.35

COMMONWEALTH IMPORTS OF PRINCIPAL ITEMS OF METALS, ETC.,
INCLUDING MACHINERY, RECORDED AS OF UNITED KINGDOM
ORIGIN, 1907 AND 1909-1912.—Continued.

NON-PREFERENTIAL.

Items.	1907.		1909.		1910.		1911.		1912.	
	Amount.	%	Amount.	%	Amount.	%	Amount.	%	Amount.	%
Iron and steel—										
Pig ...	162,815	90.16	129,212	92.68	105,596	77.10	132,857	66.24	193,486	63.89
Bar, rod, angle, and tee ...	475,748	79.31	393,939	70.88	552,788	70.37	572,569	68.50	787,646	71.07
Hoop ...	42,513	62.40	25,248	41.35	27,604	41.63	33,036	40.14	26,781	36.10
Ingots, blooms & slabs ...	10,470	26.23	7,556	23.69	9,910	19.30	18,220	26.69	23,302	35.80
Plate and sheet— plain ...	179,928	62.98	148,537	59.46	201,788	61.03	217,401	55.63	245,569	53.96
Scrap ...	44,989	88.64	37,125	33.17	48,118	96.91	68,816	97.26	74,277	97.28
	916,463	74.83	741,617	68.80	945,804	66.63	1,042,899	63.26	1,351,381	67.23
Machinery—										
Agricultural, dairying, etc. ...	53,491	10.32	81,458	17.10	96,029	13.63	74,601	10.52	80,779	13.75
Engines—										
Gas and oil ...	113,035	73.70	103,554	74.66	124,732	73.59	114,224	67.71	127,213	72.76
Sewing machines	12,789	6.76	56,038	45.70	106,849	42.17	91,325	32.00	111,968	36.58
Other machinery and mach. tools	324,889	50.55	472,127	52.61	620,046	53.55	656,451	48.58	610,259	47.91
Tools of trade ...	219,907	45.98	216,568	52.42	287,341	52.48	326,339	48.88	350,765	48.45
Wire—Iron & steel	52,365	9.67	75,435	13.64	115,555	16.51	111,267	14.92	113,316	15.65
Other ...	96,335	72.82	49,348	48.86	104,039	65.82	107,677	62.13	164,137	73.44
Wire netting ...	400,708	68.90	216,186	58.65	159,291	55.42	179,649	54.30	229,575	56.36
Other metals and man'fact. thereof	990,823	74.44	891,770	72.21	918,746	70.42	1,057,958	67.95	1,340,152	67.58
	2,264,342	49.55	2,192,484	50.22	2,532,628	47.94	2,713,494	45.40	3,128,104	48.85
Total ...	3,180,505	54.90	2,934,101	53.91	3,478,432	51.90	3,756,393	49.27	4,479,489	53.24

The relatively small proportion of the non-preferential division of metal trade is due chiefly to the following items:—Agricultural implements and machinery, mainly supplied by Canada and the United States; sewing machines, largely supplied by the United States and Germany; iron and steel wire, mainly supplied by the United States and Germany; iron hoop, largely supplied by Germany, the United States, and Belgium; and iron ingots, blooms, etc., which in 1912 were supplied in almost equal proportions by the United Kingdom, Belgium, and Germany.

The countries from which the principal supplies of rails, fishplates, etc., were drawn, and the percentage proportion supplied by each, are shewn in the following table:—

IMPORTS INTO THE COMMONWEALTH OF IRON AND STEEL RAILS, Etc.,
1907 AND 1909 TO 1912.

Country of Origin.	1907.		1909.		1910.		1911.		1912.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£		£		£	
United Kingdom ...	562,610	89.46	436,872	51.39	399,547	48.69	499,629	46.27	844,733	64.98
Canada ...	—	—	132,963	16.55	8	—	—	—	—	—
Belgium ...	19,599	3.12	21,693	2.70	14,806	1.80	43,014	3.98	125,033	9.62
Germany ...	37,969	6.04	70,201	8.74	33,864	4.13	210,757	19.51	89,739	6.90
Russia ...	—	—	—	—	—	—	—	—	—	—
Utd. States of America	7,705	1.22	140,300	17.47	371,561	45.27	309,578	28.67	214,852	16.53
Other Countries	1,048	0.16	1,131	0.15	891	0.11	16,955	1.57	25,728	1.97
Total ...	628,931	100.00	803,160	100.00	820,677	100.00	1,079,928	100.00	1,300,085	100.00

The imports of steel rails indicate that there are influences, outweighing the effect of tariff preference, affecting the distribution of the trade, for, notwithstanding that the preference has been in operation throughout the whole of the period, the proportion supplied by the United Kingdom fell from 89.46 per cent. in 1907 to 46.27 per cent. in 1911, rising again to 64.98 per cent. in 1912.

Other classes of goods which furnish useful data for measuring the effects of the preferential tariff are paints and paper. The share of the United Kingdom in the supply of these goods to the Commonwealth during the years 1907 and 1909 to 1912 is given below:—

IMPORTS OF PAINTS OF UNITED KINGDOM ORIGIN, 1907 and 1909 to 1912.

	1907.		1909.		1910.		1911.		1912.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
Preferential ...	£ 65,278	68.22	£ 71,413	73.02	£ 88,246	71.84	£ 107,660	68.06	£ 135,187	71.02
Non-preferential ...	232,623	85.88	207,909	85.27	223,395	85.52	205,309	86.60	321,516	87.78

It will be seen from the above figures that although the gain of the United Kingdom, between the first and last years of the period under review, is somewhat greater in the preferential than in the non-preferential division, there is nothing to indicate an advantage accruing from a constant cause such as tariff preference, for on the 1911 figures the non-preferential division shewed a gain and the preferential division a loss to the United Kingdom.

IMPORTS OF PAPER OF UNITED KINGDOM ORIGIN, 1907 and 1909 to 1912.

	1907.		1909.		1910.		1911.		1912.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
Preferential—	£		£		£		£		£	
Paperhangings ...	38,415	77.78	42,396	84.12	52,396	84.93	52,045	82.67	49,440	81.06
Other ...	242,421	49.75	239,579	54.42	290,671	55.62	309,349	50.41	357,529	50.82
Total ...	280,836	52.33	281,975	57.46	333,067	56.92	361,394	53.42	406,969	53.23
Non-Preferential—										
Printing ...	167,889	32.98	233,990	39.70	303,541	41.51	306,630	42.23	329,908	36.40
Other ...	87,349	46.49	71,461	40.42	82,002	39.54	110,388	37.46	97,554	34.60
Total ...	255,238	36.63	305,451	39.86	385,543	41.08	417,018	40.86	427,462	35.97

With regard to the paper trade also, there is an absence of satisfactory evidence of benefit from the preferential tariff, inasmuch as there is no greater regularity of movement or greater stability in the share of the United Kingdom in the preferential than in the non-preferential division. It will be observed that the United Kingdom attained its highest position in the preferential division in 1909, and in the non-preferential division in 1910, but has since lost ground in both. It will be noticed, further, that until 1912, when her position was lost largely through failure to maintain her share in the larger imports of printing paper, the United Kingdom had made greater gain in the non-preferential division. The imports of printing paper during 1912 were valued at £906,431, as compared with £726,415 during 1911. Of the increase Sweden supplied 29 per cent., Canada 26 per cent., the United States of America 25 per cent., and the United Kingdom only 13 per cent. To maintain the position as in 1911 the United Kingdom should have supplied 42.23 per cent. The import of Swedish printing paper into the Commonwealth have increased from £7,743 in 1907 to £104,931 in 1912.

A further list of items, preferential and non-preferential, recorded as of United Kingdom origin is appended:—

PRINCIPAL OTHER PREFERENTIAL IMPORTS, 1907 and 1909 to 1912.

Article.	1907.		1909.		1910.		1911.		1912.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Milk—Preserved, concentrated, etc. ...	13,727	8.05	135,240	92.64	124,116	91.72	63,162	84.93	11,495	44.30
Confectionery, cocoa, chocolate, etc. ...	270,311	67.59	295,721	70.24	345,733	70.40	417,887	62.85	490,936	56.09
Gelatine, glue, cements	19,115	33.14	21,367	47.72	25,576	44.92	27,156	45.69	33,748	49.23
Yarns ...	128,166	78.42	112,409	80.34	142,014	84.38	249,543	90.06	309,713	93.00
Oils ...	25,226	11.69	24,928	9.99	33,976	9.29	32,633	6.48	37,647	4.61
Varnishes ...	66,387	83.83	63,487	84.83	81,357	83.58	69,410	77.14	91,945	76.45
Slates—roofing	26,615	62.65	20,444	73.26	28,515	71.59	24,934	54.66	48,075	70.85
Leather ...	60,550	83.02	51,889	84.62	69,259	84.32	77,336	85.59	130,180	80.61
Rubber, m'factures of	136,463	58.82	130,118	38.94	182,157	46.34	199,231	37.94	210,654	31.37
Furniture, etc. ...	69,200	27.09	63,786	37.10	63,093	31.98	80,252	30.47	118,502	33.83
Wood manufactures...	40,229	26.97	35,601	31.95	37,761	29.60	40,219	26.28	50,958	26.03
China & earthenware	216,869	64.38	172,382	66.26	217,193	65.50	269,930	63.20	278,763	67.42
Glass and glassware	90,609	27.02	68,925	25.28	84,006	26.46	95,931	25.73	110,868	25.39
Cement (Portland) ...	23,638	46.33	45,153	58.14	79,032	56.96	62,708	41.44	69,599	26.60
Tiles—roofing	17,766	26.20	20,851	57.63	23,498	50.99	25,503	65.24	38,163	64.29
Stationery ...	194,555	64.70	163,980	63.85	186,897	64.54	205,216	61.54	245,003	66.03
Timepieces, jewellery, and fancy goods ...	488,120	46.58	427,331	6.97	473,518	46.00	535,884	43.85	567,541	42.96
Arms...	28,392	35.34	39,356	6.01	39,599	45.05	45,687	41.28	44,864	36.62
Percussion caps, cartridges, etc. ...	82,999	54.72	74,823	54.33	69,439	53.32	84,544	57.33	124,495	64.43
Detonators and fuse...	42,984	98.06	45,950	97.94	40,087	97.12	43,359	98.55	48,729	98.11
Dynamite, gunpowder	277,394	82.39	324,699	76.02	307,130	70.66	299,351	71.99	371,787	81.17
Bags, baskets, etc. ...	42,038	33.59	47,026	31.42	54,706	29.79	74,361	27.78	97,379	30.82
Brushware ...	89,025	53.58	56,981	56.23	73,194	55.41	80,839	51.51	84,996	51.84
Blackings, etc. ...	55,502	66.39	23,359	68.17	12,444	48.01	10,262	39.21	11,124	38.01
Electrical articles and materials ...	233,439	68.72	164,446	74.16	277,105	77.49	430,016	75.10	586,559	86.59
Matches ...	44,848	28.74	57,716	37.03	59,043	39.89	107,305	57.04	131,346	65.42
Pianos and parts...	43,663	13.94	34,549	13.16	46,067	13.58	73,374	15.50	65,234	12.23
Oilmen's stores	57,124	63.63	63,427	68.22	78,803	71.04	82,631	71.19	112,423	72.56
Vehicles, bicycles, tricycles, etc. ...	418,019	65.32	490,957	61.56	669,993	56.30	775,689	48.05	1,061,433	44.96

PRINCIPAL NON-PREFERENTIAL IMPORTS, 1907 and 1909 to 1912.

Article.	1907.		1909.		1910.		1911.		1912.	
	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.	Amount	Per cent.
	£		£		£		£		£	
Fish ...	135,420	35.13	143,694	31.13	147,793	26.50	158,201	27.95	201,364	25.97
Meats ...	23,271	49.65	24,901	46.85	34,260	51.44	34,508	52.75	46,940	51.45
Grain, prepared (malt, oatmeal, etc.) ...	61,412	76.81	37,867	68.84	36,825	67.94	34,360	65.18	44,822	62.49
Hops ...	7,604	15.30	6,430	16.95	9,097	15.12	9,516	19.37	17,415	19.35
Oilmen's stores (free)	48,694	82.27	72,125	80.88	88,500	82.73	89,911	80.47	109,827	79.06
Mustard ...	45,966	98.07	46,074	99.18	48,625	98.80	47,532	97.97	53,243	98.30
Tobacco, mfd. (cigars, cigarettes, etc.) ...	35,238	10.76	37,850	13.12	44,122	13.63	57,366	14.69	70,672	16.32
Oils and greases ...	138,834	29.17	177,523	40.20	231,648	37.89	315,347	39.37	330,025	44.90
Marble and stone ...	14,071	26.91	16,222	29.56	13,445	25.04	18,383	27.41	5,172	13.37
Indian rubber manufs.	41,132	22.10	44,726	26.21	50,642	17.50	49,362	12.20	50,260	15.55
Leather, manufs. of	114,009	25.44	88,655	19.99	95,494	21.58	107,325	23.84	61,049	12.18
Harness—minor articles for ...	62,148	94.73	68,542	97.12	92,602	96.39	111,279	95.86	102,182	96.55
Furniture—minor articles for ...	34,801	74.10	50,931	76.10	52,033	77.52	60,763	78.63	77,692	82.10
Earth ware, Bricks, etc	19,321	82.02	30,564	69.26	37,289	66.19	51,235	61.01	24,364	67.88
Glass and Glassware...	28,247	48.15	39,039	44.04	50,439	50.30	47,739	38.31	65,581	45.25
Books, printed	424,045	92.02	465,719	90.34	501,495	88.83	616,657	89.24	613,976	89.54
Stationery ...	44,449	66.48	33,041	47.64	41,936	52.91	51,430	46.42	34,828	51.42
Instruments, scientific	13,803	62.35	17,709	67.09	22,707	69.60	27,897	67.89	36,841	71.42
do., surgical & dental	40,136	46.12	41,412	44.69	45,338	42.56	63,062	44.11	57,510	42.73
Drugs and chemicals—Insecticides, disinfectants, etc. ...	35,070	67.72	30,337	69.97	33,927	63.08	41,811	75.42	48,021	75.90
Medicines ...	146,689	62.63	123,428	58.13	157,712	61.95	157,316	58.92	181,778	59.52
Essential oils	19,092	42.87	8,067	24.93	11,517	27.01	11,839	23.07	16,934	24.38
Acids ...	13,361	29.08	20,518	44.04	24,047	40.48	17,279	35.94	38,440	43.71
Cyanide of potassium	174,571	84.94	196,548	83.63	233,110	88.74	196,198	87.52	184,134	85.28
Sodas (exclud. soda nitrate) ...	82,699	94.80	79,095	92.03	117,228	94.42	125,301	95.43	142,569	96.40
Fertilisers ...	100,331	25.79	74,014	20.52	124,468	18.58	90,163	17.57	52,756	9.33
Other drugs ...	200,009	31.73	135,879	23.13	138,943	25.79	161,237	23.08	164,196	22.46
Musical instruments (not pianos) & parts	29,952	26.74	19,958	23.63	26,854	24.09	28,431	21.76	37,078	26.11
Soap ...	47,692	46.12	34,994	46.44	45,553	43.69	44,314	41.40	53,001	39.61
Ships ...	655,760	96.34	749,950	99.05	687,500	96.58	241,245	70.94	1,146,922	92.59

4. **Preferential Tariff of New Zealand.**—"The Preferential and Reciprocal Trade Act 1903" of New Zealand introduced preferential rates of duty in favour of the produce of the British Dominions by imposing extra duties on certain imports which were the produce or manufacture of other countries. The list of preferential items was materially extended by the New Zealand "Tariff Act 1907," from the 31st March, 1908.

The following tables present an analysis of the imports into New Zealand during 1912, distinguishing those which would be affected by an application of the preferential provisions of the "Tariff Act 1907":—

NEW ZEALAND—IMPORTS, 1912, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and British Possessions.	From Foreign Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free	2,026,054	—	2,026,054
Dutiable	3,743,483	1,337,182	5,080,665
Total	5,769,537	1,337,182	7,106,719
Imports not affected by preferential tariff—			
Free	6,522,888	2,100,859	8,623,747
Dutiable	4,205,166	640,947	4,846,113
Total	10,728,054	2,741,806	13,469,860
Total merchandise	16,497,591	4,078,988	20,576,579
Bullion and specie	399,995	—	399,995
Total	16,897,586	4,078,988	20,976,574

NOTE.—In this table the imports affected by the preferential provisions of the tariff are stated, as far as possible, according to the country of origin; those unaffected by preference according to country of shipment, the country of origin of these not being recorded. Without doubt imports from the United Kingdom and British Possessions include goods of foreign origin.

NEW ZEALAND—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1912.

FROM UNITED KINGDOM AND BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
		£	Rate %	£	Rate %
(A) Free	2,026,054	...	...	353,252	17.68
(B) Dutiable	3,743,483	750,897	20.06	1,107,895	29.60
Total	5,769,537	750,897	13.01	1,466,147	25.41

NEW ZEALAND—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES,
1912—Continued.

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group A above	123,195	18,007	14.62	...	...
" " " B "	1,213,987	358,938	29.57	246,519	20.32
Total	1,337,182	376,945	28.19	246,519	18.44

5. **Preferential Tariff of South Africa.**—Preference to goods of United Kingdom origin was first granted by the South African Customs Union Convention of 1903 from the 15th August of that year, and similar treatment was extended to Canada from the 1st July, 1904. The present preferential tariff of the South African Customs Union (Convention, 1906, and amendments, 1908) applies to produce of United Kingdom, Canada, New Zealand and the Commonwealth.

An analysis of the trade of South Africa is appended:—

SOUTH AFRICA—IMPORTS, 1912, PREFERENTIAL AND NON-PREFERENTIAL.

Particulars.	From United Kingdom and Reciprocating Countries.	From other Countries.	Total.
Imports affected by preferential tariff—	£	£	£
Free... ..	5,147,782	...	5,147,782
Dutiable	16,281,736	10,041,515	26,323,251
Total	21,429,518	10,041,515	31,471,033
Imports not affected by preferential tariff—			
Free... ..	3,229,886	1,721,586	4,951,422
Dutiable	805,970	2,419,520	3,225,490
Total	4,035,806	4,141,106	8,176,912
Total merchandise	25,465,324	14,182,621	39,647,945
Bullion and specie	286,966	751,958	1,038,924
Total	25,752,290	14,934,579	40,686,869

NOTE.—Owing to difficulty in applying the tariff rates to the statistical items, the above results must be taken as approximate only.

SOUTH AFRICA—IMPORTS AFFECTED BY PREFERENTIAL TARIFF RATES, 1912.
FROM UNITED KINGDOM AND RECIPROCATING BRITISH POSSESSIONS.

Particulars.	Imports.	Duty which would be payable under—			
		Preferential Tariff.		General Tariff.	
	£	£	Rate %	£	Rate %
(A) Free	5,147,782	...	...	154,433	3.00
(B) Dutiable	16,281,736	2,277,708	14.00	2,776,141	17.05
Total	21,429,518	2,277,708	10.63	2,930,574	13.68

FROM FOREIGN COUNTRIES.

Particulars.	Imports.	Duty which would be payable under—			
		General Tariff.		Preferential Tariff.	
	£	£	Rate %	£	Rate %
Imports similar to group (A) above	3,962,517	118,876	3.00	...	...
" " (B) "	6,078,998	1,250,757	20.57	1,046,173	17.21
Total	10,041,515	1,369,633	13.69	1,046,173	10.46

6. Preferential Tariff of Canada.—Preferential tariff treatment of goods of the United Kingdom and certain British Possessions was first given by Canada in 1897.

The published trade returns of Canada do not permit of an analysis similar to those given for the Commonwealth, New Zealand, and South Africa.

7. Preferential Tariff Comparisons.—The following table presents a comparative statement of the imports into the Commonwealth, New Zealand, and South Africa during 1912, the imports of each country having been analysed according to the application of its own tariff :—

APPLICATION OF PREFERENTIAL TARIFFS.—COMPARATIVE STATEMENT, 1912.

Particulars.	C'wealth of Australia.	Dominion of New Zealand.	Customs Union of South Africa.
1. Total imports of merchandise ...	£ 76,483,360	20,576,579	39,647,945
2. " " from favoured countries	£ 38,589,434	16,497,591*	25,465,324
3. Imports from favoured countries, p.c. to item 1	50.45	83.00	64.22
4. Imports affected (favourably or adversely) by preferential rates	£ 40,148,808	7,106,719	31,471,033
5. Imports affected (favourably or adversely) by preferential rates, per cent. to total item 1...	52.49	37.84	79.39
6. Imports favoured by preferential rates	£ 25,303,551	5,769,537*	21,429,518
7. " " " p.c. to item 1	33.08	30.72	54.05
8. " " " " " 2	65.25	34.97	84.15
9. Amount of rebate	£ 1,274,657	715,250	652,866
10. Rate of rebate per cent. <i>ad val.</i>	5.04	12.40	3.05

* See note to table on page 563.

From the foregoing it will be observed that the preferential schemes, as at present in force in the different parts of the Empire, are by no means uniform. The preferential tariff of New Zealand applies to a wider range of countries than that of any other part of the Empire, inasmuch as the advantage of the lower tariff rates is extended to all parts of the British dominions, while those of Canada and South Africa apply to the United Kingdom and reciprocating British Possessions, and that of the Commonwealth to the United Kingdom only. Apart from the British preferential tariff, however, the Commonwealth, in consideration of its participation in the South African preference, gives a preference to certain products of that country. New Zealand and South Africa have also a special reciprocal trade agreement in addition to the main schemes of preference. Canada, under the Customs Tariff Act of 1907, makes provision for an intermediate tariff, which may be applied to the produce of *foreign* countries. Canada already has a reciprocal trade agreement with France.

The margin between the rates of duty applied to British and foreign goods, respectively, is also higher in New Zealand than in the Commonwealth or South Africa, though in the latter countries the preferential tariff affects a greater proportion of the trade. On the basis of the imports into New Zealand during 1912 the average margin of preference was 12.40 per cent. of the value of the goods, while in the Commonwealth the similar margin was 5.04 per cent., and in South Africa 3.05 per cent. The average rate of duty charged in New Zealand on British goods, subject to preferential rates, was 13.01 per cent., while the same goods if of foreign origin would have had to pay 25.41 per cent. In the Commonwealth the collateral rates were 13.68 per cent. and 18.72 per cent. respectively, and in South Africa 10.63 per cent. and 13.68 per cent.

8. Comparative Results of Preferential Tariffs of Australia, New Zealand, and South Africa.—The following table shews the apparent aggregate results of the preferential tariffs of the Commonwealth of Australia, the Dominion of New Zealand, and the Union of South Africa. The figures shew the value of preferential and non-preferential imports from favoured countries, and the percentage proportion of such imports in relation to the total imports of similar goods:—

IMPORTS FAVOURED BY PREFERENTIAL TARIFFS, 1908 to 1912.

Year.	South Africa. Preference, 3%.		Commonwealth. Preference 5%.		New Zealand. Preference, 12%.	
	Value.	Per cent.	Value.	Per cent.	Value.	Per cent.
	£		£		£	
1908 ...	14,785,678	71.60	15,895,721	65.70	4,999,604	79.94
1909 ...	16,823,668	72.49	16,482,032	66.80	3,791,061	81.81
1910 ...	21,746,920	70.88	19,049,506	65.88	4,268,597	81.02
1911 ...	22,000,161	69.76	21,118,057	63.58	5,712,161	83.10
1912 ...	21,429,518	68.08	25,303,551	63.02	5,769,537	81.18

IMPORTS UNAFFECTED BY PREFERENTIAL TARIFFS, 1908 to 1912.

1908 ...	1,826,774	39.60	9,006,821	50.70	9,805,369	84.40
1909 ...	2,075,982	40.77	9,137,146	49.94	8,681,006	85.25
1910 ...	*3,697,588	*51.17	10,820,679	48.37	9,627,786	83.86
1911 ...	3,138,193	46.20	10,956,913	46.81	9,876,257	82.92
1912 ...	4,035,806	49.35	12,962,899	50.27	10,728,054	79.66

* The large increase and improvement in the relative position of favoured countries in this group is due to the large increase in the imports of "Government stores," of which 57 per cent. in 1910 was from favoured countries, principally from the United Kingdom.

From the above table it will be seen that, in regard to the Commonwealth, the proportion of the trade supplied by the United Kingdom has fallen in both the preferential and non-preferential divisions, the decline being greater in the former division. In South Africa the proportion of the trade in the preferential division supplied by favoured countries has also fallen, while, on the other hand, the proportion supplied in the non-preferential division has largely increased. In New Zealand, where the preference amounts to about 12 per cent. on the value of the goods, against 5 per cent. in Australia, and 3 per cent. in South Africa, the position of the favoured countries has been well maintained in the preferential, though it has declined materially in the non-preferential division.

The quinquennial average effect (1908-12), corresponding to the preference of 3, 5, and 12 per cent., appears to be to reduce the proportional decrease of trade in the ratios respectively of 1.17, 0.89, and 0.41.

9. South African Preference.—Under the Commonwealth Customs Tariff (South African Preference) Act, No. 17 of 1906, preferential rates of duty were prescribed for certain goods "when those goods are imported from and are the manufacture of any of the British South African Colonies or Protectorates which are included within the South African Customs Union."

Preference to South African States was further confirmed by the Customs Tariff Amendment Act 1908 (No. 13 of 1908).

The imports, during 1912, affected by the above-mentioned Act were as follows:—

IMPORTS INTO THE COMMONWEALTH DURING 1912 OF ARTICLES ENTITLED TO PREFERENCE UNDER THE SOUTH AFRICAN PREFERENCE ACT AND THE VALUE OF THE PREFERENCE THEREON.

Particulars.				Rate of Rebate.	Imports.		Amount of Rebate.
					Quantity.	Value.	
						£	£ s.
Fish—							
Preserved in tins, etc.	...	lbs.	½d. per lb.		62,004	3,278	64 12
Grain—							
Maize	...	...	cental	6d. per cntl.	460,721	162,635	11,518 0
Oats	...	...	cental	4½d. per cntl.	44,031	15,389	825 11
Feathers—							
Undressed	...	...	...	5 per cent.	—	5,820	291 0
Dressed	...	...	...	10 per cent.	—	323	32 6
Tobacco manufactured—							
Cut	...	...	lbs.	1/3 per lb.	22,418	3,179	1,401 2
N.E.I.	...	...	lbs.	1/- per lb.	1,365	190	68 5
Total				—	—	190,814	14,200 16

§ 12. Imports of Dutiable and Free Goods.

1. Classified Statement of Imports.—The following table shows, classified according to their nature, and distinguishing between dutiable and free goods, the estimated value of imports entered for home consumption during 1912, together with the amount and equivalent *ad valorem* rates of duty collected thereon. As no record is made of the

value, entered for home consumption, of goods subject to specific duties, the value has been estimated on the basis of the value of corresponding imports. The free goods entered for home consumption have been taken to be the total imports of free goods less the value of similar goods re-exported.

VALUE OF GOODS (EXCLUDING BULLION AND SPECIE) ENTERED FOR CONSUMPTION IN THE COMMONWEALTH, AND DUTY COLLECTED THEREON, 1912.

Classification of Imports.		Value Entered for Consumption.			Duty Collected, less Refunds.	Equivalent <i>ad valorem</i> rate per cent. on—	
		Dutiable.	Free. (Net Imports)	Total.		Dutiable Imports.	All Imports.
		£	£	£	£	%	%
I.	Foodstuffs of animal origin (excluding living animals)	919,904	101,030	1,020,934	159,181	17.35	15.59
II.	Foodstuffs of vegetable origin and salt	3,982,249	221,945	4,204,194	1,252,474	31.45	29.79
III.	Beverages (non-alcoholic) & substances used in making	495,256	1,272,514	1,767,770	99,239	20.03	5.61
IV.	Spirits & alcoholic liquors, including industrial spirits and pharmaceutical preparations dutiable as spirits	2,009,202	591	2,009,793	2,767,912	137.77	137.73
V.	Tobacco and preparations thereof	838,711	...	838,711	1,209,355	144.20	144.20
VI.	Live animals	41,449	134,957	176,406	286	0.69	0.16
VII.	Animal substances (mainly unmanufactured) not foodstuffs	104,423	232,228	336,651	17,808	17.05	5.29
VIII.	Vegetable substances and fibres	190,726	1,201,399	1,392,125	52,961	27.76	3.80
IX.	Apparel, textiles, and manufactured fibres	12,142,449	7,268,350	19,410,799	2,684,415	22.11	13.83
X.	Oils, fats, and waxes	1,410,041	780,181	2,190,222	225,554	16.00	10.27
XI.	Paints and varnishes	673,695	25,736	699,431	115,696	17.17	16.54
XII.	Stones and minerals used industrially	165,492	39,954	205,446	38,951	23.53	18.96
XIII.	Specie (omitted)	...	...	...	...	...	...
XIV.	Metals (unmanufactured) and ores, excluding gold and silver bullion	16,613	318,293	334,906	2,491	14.95	0.74
XV.	Metals partly manufactured	...	1,398,857	1,398,857	...	...	...
XVI.	Metals manufactured, including machinery	10,577,176	6,333,275	16,910,451	1,693,567	16.01	10.01
XVII.	Leather and manufactures of leather and substitutes therefor, also indiarubber and indiarubber manufactures	1,310,990	445,462	1,756,452	296,787	22.64	16.90
XVIII.	Wood and wicker, raw and manufactured	3,275,936	238,441	3,514,377	537,483	16.41	15.29
XIX.	Earthenware, cements, china, glass, & stoneware	1,351,099	93,956	1,447,055	387,895	28.71	26.80
XX.	Paper and stationery	947,743	2,056,311	3,004,054	244,845	25.84	8.15
XXI.	Jewellery, timepieces, and fancy goods	1,301,804	504,893	1,806,697	336,002	25.81	18.60
XXII.	Optical, surgical, & scientific instruments	206,854	245,385	452,239	25,958	12.55	5.74
XXIII.	Drugs, chemicals, and fertilisers	525,662	1,847,004	2,372,666	105,579	20.03	4.49
XXIV.	Miscellaneous	3,898,094	3,794,550	7,692,644	881,295	22.60	11.46
	Total merchandise	46,385,568	28,557,312	74,942,880	13,135,734	28.32	17.53
	Merchandise, excluding stimulants and narcotics	43,537,655	28,556,721	72,094,376	9,158,467	21.03	12.71

2. **Comparative Rates of Duty.**—Omitting bullion and specie, the proportion of total merchandise entered for "home consumption" free of duty in the undermentioned countries, and also the equivalent *ad valorem* rates of duty charged, are as follows:—

PROPORTION OF FREE GOODS AND RATES OF IMPORT DUTY.

Particulars.	Australia.		Canada.	New Zealand.	U.S. of America.
	31/12/06	31/12/12	31/3/12	31/12/12	30/6/12
Year ended					
Percentage of free merchandise ...	35.18	38.10	35.70	51.76	53.73
Equival't <i>ad valorem</i> rates of duty on	%	%	%	%	%
Spirits, wines, and malt liquors	153.23	137.73	120.80	183.80	88.88
Tobacco, and preparations thereof	168.65	144.20	22.30*	130.60	78.76†
Other dutiable merchandise ...	17.04	21.03	23.86	22.03	37.02
Other merchandise dutiable & free	10.75	12.71	15.34	10.09	16.57
Total dutiable merchandise ...	27.14	28.32	26.12	33.67	40.16
Total merchandise dutiable & free	17.59	17.53	16.79	16.24	18.58
Customs duty per head	£ s. d. 1 15 10	£ s. d. 2 7 6	£ s. d. 2 5 0	£ s. d. 3 4 3†	£ s. d. 0 13 1

* Unmanufactured tobacco is admitted to Canada free of duty. † Exclusive of Maoris.
 ‡ Tobacco is admitted free of Customs duty from the Philippine Islands.

In 1906—the last full year of operation of the 1902 tariff—free goods represented 35.18 per cent. of the total imports of merchandise into the Commonwealth. The tariff of 1908 extended the free list so that in 1908 the proportion of free goods increased to 39.69 per cent., but it has fallen to 38.10 per cent., in 1912. The tariff of 1908, while extending the free list, increased the average rates on the goods subject to duty. Excluding drinks and tobacco the average rate of duty on dutiable goods during 1906 was 17.04, in 1908 it was 21.30, and in 1912 it was 21.03 per cent. The combined effect of the extension of the free list with an increase of duties on the remaining goods has been that in 1912 the average rate of duty over the total imports of merchandise was 17.53 per cent., against 17.59 per cent. in 1906.

From the above table it will be seen that, excluding spirits, etc., and tobacco, the average rate of duty charged in the Commonwealth on dutiable goods imported during 1912 was 1.00 per cent. *ad valorem* lower than in New Zealand, and about 2.83 per cent. lower than in Canada, and was only a little more than one half the rate charged in the United States. On the other hand the proportion of free goods was smaller in the Commonwealth than in New Zealand or the United States, though larger than in Canada. Over the total imports the equivalent *ad valorem* rates range from 16.24 per cent. in New Zealand to 18.58 per cent. in the United States. The influence of the various rates charged on stimulants and tobacco in smoothing out the differences in average *ad valorem* rates on the total imports should not be lost sight of. About 80 per cent. of the value of tobacco imported into Canada is unmanufactured tobacco admitted free of duty, and subject only to excise on manufacture.

SECTION XVI.

SHIPPING.

§ 1. General.

1. **Record of Shipping before Federation.**—Prior to Federation it was customary for each State to regard the matter of shipping purely from the State standpoint, and vessels arriving from or departing to countries beyond Australia, via other Australian States, were recorded as if direct from or to the oversea country. Thus a mail steamer from the United Kingdom, which made Fremantle her first port of call in Australia, would be recorded not only there, but also again in Adelaide, Melbourne and Sydney, as an arrival from the United Kingdom. Consequently, any aggregation, especially of the recent shipping records of the different States, would repeatedly include a large proportion of the shipping visiting Australia. In earlier years, when many vessels sailed from the various State ports direct for their destination, the error of repeated inclusion was less serious, but as the commerce of Australia developed, more and more ports of call were included in the voyage of each vessel, and this made the mere aggregation of State records correspondingly misleading. It has, as a matter of fact, led to some erroneous publications of statistical results and deductions.

2. **Shipping since Federation.**—With the inauguration of the Commonwealth, the statistics of its shipping, especially of its oversea shipping, became of greater intrinsic importance. As an index of the position of Australia among the trading countries of the world, such statistics had a constitutional importance commensurate with Commonwealth interests, and correspondingly greater than those of individual States, and the nationality of the shipping trading with Australia became also a matter of greater moment.

3. **Difficulties of Comparisons of Total Shipping.**—From what was said in paragraph 1 above, it is obviously impossible now to obtain results for Australia not subject to the defect of repeated inclusions of the same vessels. Unfortunately, the statistical records of the first three years of Federal history are subject to the same defect, and do not admit of direct comparison with those now kept. A careful estimate of the extent and effect of repeated inclusion has been made and applied to the records of the earlier years, so as to extend the comparative results to those years. The error of such estimation will be negligible for comparative purposes.

4. **Present System of Record.**—The present system of record treats Australia as a unit, and counts, therefore, only one entry and one clearance for each visit to the Commonwealth. Repeated voyages of any vessel are, of course, included.

On arrival of every vessel at a port in the Commonwealth, whether from an oversea country or from another port within the Commonwealth, the master is required to deliver to the Customs officer a form giving all particulars, necessary for statistical purposes, in regard to the ship, passengers and crew. Similarly, on departure from a port a form containing corresponding information is lodged. These forms, which provide a complete record of the movements of every vessel in Commonwealth waters, are at the end of each month forwarded by the Customs officer at each port to the Commonwealth Bureau of Statistics, and furnish the material for the compilation of the Shipping and Migration Returns.

Under the system previously in force it was found that the estimates of population, in so far as they were based on seaward movement, were very unsatisfactory, and it is believed that the method referred to above gives decidedly better results.

§ 2. Oversea Shipping.

1. **Total Oversea Shipping.**—In order to extend, as indicated, the comparison of the oversea shipping to the earliest years for which any records are available, an estimate of its probable amount has been made. This estimate is based on a comparison of the results obtained by merely aggregating State statistics with the defect of multiple records, and the results obtained under the present system, which avoids the multiple record. From the nature of the case it is obvious that the ratio of repeated inclusion to the total traffic has been continually advancing, and this fact has been duly taken into account in deducing the results in the following table:—

TOTAL OVERSEA SHIPPING ENTERED AND CLEARED THE COMMONWEALTH, 1822 to 1912 (MULTIPLE RECORD EXCLUDED BY ESTIMATION PRIOR TO 1904).

Year.	Vessels.	Tons.	Year.	Vessels.	Tons.	Year.	Vessels.	Tons.
1822 ...	73	30,683	1853 ...	3,364	1,490,422	1883 ...	3,857	3,433,102
1823 ...	76	30,543	1854 ...	3,781	1,744,251	1884 ...	4,315	4,064,947
1824 ...	71	29,029	1855 ...	3,239	1,449,657	1885 ...	4,052	3,999,917
1825 ...	80	30,786	1856 ...	2,669	1,195,794	1886 ...	3,793	3,853,246
1826 ...	65	23,587	1857 ...	2,842	1,530,202	1887 ...	3,454	3,764,430
1827 ...	95	29,301	1858 ...	2,607	1,378,050	1888 ...	3,933	4,464,895
1828 ...	124	38,367	1859 ...	2,759	1,403,210	1889 ...	3,897	4,460,426
1829 ...	185	56,735	1860 ...	2,464	1,288,518	1890 ...	3,363	4,150,027
1830 ...	195	56,185	1861 ...	2,466	1,149,476	1891 ...	3,778	4,726,307
1831 ...	185	52,414	1862 ...	2,917	1,389,231	1892 ...	3,432	4,239,500
1832 ...	206	59,628	1863 ...	3,378	1,564,369	1893 ...	3,046	4,150,433
1833 ...	241	72,647	1864 ...	3,344	1,537,433	1894 ...	3,397	4,487,546
1834 ...	249	77,068	1865 ...	3,005	1,317,934	1895 ...	3,331	4,567,883
1835 ...	310	96,928	1866 ...	3,378	1,470,728	1896 ...	3,309	4,631,266
1836 ...	310	93,974	1867 ...	2,927	1,277,679	1897 ...	3,279	4,709,697
1837 ...	442	113,432	1868 ...	3,080	1,350,573	1898 ...	3,222	4,681,398
1838 ...	471	132,038	1869 ...	3,107	1,472,837	1899 ...	3,356	5,244,197
1839 ...	652	191,507	1870 ...	2,877	1,381,378	1900 ...	3,719	5,894,173
1840 ...	915	277,335	1871 ...	2,748	1,312,642	1901 ...	4,028	6,541,991
1841 ...	900	278,738	1872 ...	2,788	1,380,466	1902 ...	3,608	6,234,460
1842 ...	862	232,827	1873 ...	3,159	1,609,067	1903 ...	3,441	6,027,843
1843 ...	736	183,427	1874 ...	3,153	1,728,269	1904 ...	3,700	6,682,011
1844 ...	629	155,654	1875 ...	3,437	1,914,462	1905 ...	4,088	7,444,417
1845 ...	735	164,221	1876 ...	3,295	1,863,343	1906 ...	4,155	7,966,658
1846 ...	888	211,193	1877 ...	3,157	1,930,434	1907 ...	4,394	8,822,866
1847 ...	1,033	245,358	1878 ...	3,372	2,127,518	1908 ...	4,051	8,581,151
1848 ...	1,182	305,840	1879 ...	3,344	2,151,338	1909 ...	3,910	8,516,751
1849 ...	1,137	355,886	1880 ...	3,078	2,177,877	1910 ...	4,048	9,333,146
1850 ...	1,300	425,206	1881 ...	3,284	2,549,364	1911 ...	4,174	9,984,801
1851 ...	1,576	515,061	1882 ...	3,652	3,010,944	1912 ...	4,052	10,275,314
1852 ...	1,896	844,243						

It will be borne in mind that while the above figures in themselves have no absolute significance, nevertheless, on the assumption that the element of duplication has been in fairly constant ratio, they furnish the best available indication of the growth of Australian oversea shipping.

2. **Comparison with other Countries.**—The place of Australia among various countries in regard to oversea shipping is indicated in the following table, both absolutely and in respect of tonnage per head of population:—

OVERSEA SHIPPING OF VARIOUS COUNTRIES.

Country.	Year.	Tonnage Entered and Cleared.		Country.	Year.	Tonnage Entered and Cleared.	
		Total.	Per Inhabitant.			Total.	Per Inhabitant.
Argentine Rep. ...	1907	22,994,473	4.1	Japan ...	1911	40,103,283	0.8
Belgium ...	1911	31,804,274	1.2	New Zealand ...	1912	3,340,722	3.2
Canada ...	1911	24,589,605	3.4	Norway ...	1911	10,245,483	4.2
Commonwealth	1912	10,275,314	2.2	S. African Un. ...	1911	10,856,610	1.8
Denmark ...	1911	17,144,432	6.2	Sweden ...	1911	23,390,647	4.2
France ...	1911	61,366,051	1.5	United K'dom	1912	152,457,045	3.3
Germany ...	1911	49,460,469	0.8	United States	1912	69,365,104*	0.7
Italy ...	1910	51,958,916	1.5				

* Exclusive of Northern Border and Lake Ports.

3. **Shipping Communication with various Countries.**—Particulars of the number and tonnage of vessels recorded between Australia and various countries, distinguishing British from foreign countries, are given in the following tables—the table below shewing the tonnage of vessels which were recorded as having entered the Commonwealth from the particular countries mentioned; that on page 573 shews the tonnage of vessels which were recorded as having cleared the Commonwealth for the particular countries, while on page 574 is shewn the total tonnage of vessels recorded as entered and cleared from and to the countries named :—

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1908 to 1912.

ENTERED.

Country.	1908.	1909.	1910.	1911.	1912.
United Kingdom ...	1,146,118	1,243,115	1,377,151	1,464,057	1,625,733
Canada ...	87,682	89,990	108,727	107,932	112,729
Fiji ...	44,016	54,462	49,493	77,745	73,033
Hong Kong ...	66,114	41,521	22,327	17,880	27,440
India and Ceylon ...	105,728	99,762	169,800	99,196	93,787
Mauritius ...	8,137	35,366	43,133	23,443	27,203
New Zealand ...	794,488	737,899	766,777	841,746	926,342
Papua ...	30,369	42,803	47,881	78,468	73,010
South African Union ...	88,677	207,619	208,140	289,229	96,679
South Sea Islands ...	57,694	57,341	64,164	61,983	37,472
Straits Settlements ...	133,601	104,284	89,731	97,735	102,598
Other British Countries ...	3,370	4,310	13,588	324	3,068
Total British Countries ...	2,565,994	2,718,472	2,960,912	3,159,738	3,199,094
Africa, Portuguese East ...	32,180	89,506	96,966	74,083	46,751
Belgium ...	17,242	11,548	15,273	18,734	11,852
Chile ...	238,460	81,433	111,504	182,460	176,416
Dutch East Indies ...	27,831	78,203	72,212	43,458	67,761
France ...	81,713	113,964	99,308	83,627	47,191
Germany ...	270,135	276,021	290,834	314,167	427,320
Hawaiian Islands ...	21,138	38,011	32,020	17,167	16,508
Japan ...	185,633	136,340	153,547	157,533	157,734
Mexico ...	21,562	36,443	24,366	16,481	19,445
New Caledonia ...	57,630	63,250	62,542	71,390	77,265
Norway ...	29,417	36,094	37,201	40,204	34,715
Peru ...	47,247	50,291	27,051	32,922	35,482
Philippine Islands ...	174,042	75,977	28,550	56,603	56,216
South Sea Islands (foreign)...	30,899	30,990	37,634	56,878	67,805
Sweden ...	33,589	46,317	41,231	77,983	48,060
United States ...	354,625	290,520	338,587	339,208	453,354
Other Foreign Countries ...	106,342	187,814	178,032	200,584	220,388
Total Foreign Countries...	1,729,685	1,642,722	1,646,908	1,833,482	1,964,263
Total all Countries ...	4,295,679	4,361,194	4,607,820	4,993,220	5,163,357

SHIPPING TONNAGE ENTERED AND CLEARED, ETC.—(Continued.)

CLEARED.

Country.	1908.	1909.	1910.	1911.	1912.
United Kingdom ...	963,548	1,239,669	1,467,925	1,537,084	1,369,143
Canada ...	51,248	53,541	50,510	54,732	54,661
Fiji ...	66,890	49,890	53,713	90,574	85,372
Hong Kong ...	66,083	48,751	31,145	19,155	32,121
India and Ceylon ...	173,530	153,863	139,584	143,632	144,487
Mauritius ...	2,687	5,048	9,396	2,953	4,526
New Zealand ...	873,077	880,668	975,121	1,044,013	1,183,741
Papua ...	25,232	43,802	50,552	71,811	66,409
South African Union ...	50,539	48,485	92,070	85,346	75,467
South Sea Islands ...	50,397	31,707	43,539	38,133	55,717
Straits Settlements ...	165,313	139,313	156,704	127,725	137,139
Other British Countries ...	...	...	2,924	...	...
Total British Countries	2,488,544	2,694,737	3,073,183	3,215,158	3,208,783
Africa, Portuguese East ...	8,535	19,697	18,716	6,949	3,836
Belgium ...	102,187	128,670	115,121	168,397	169,020
Chile ...	457,477	300,451	342,478	393,642	508,724
Dutch East Indies ...	59,412	61,753	105,293	115,499	155,332
France ...	81,226	63,490	113,226	155,506	94,062
Germany ...	252,881	279,526	312,128	321,502	349,685
Hawaiian Islands ...	46,009	26,253	32,520	26,200	34,009
Japan ...	110,486	90,732	102,183	103,550	96,108
Mexico ...	31,455	9,675	13,146	13,565	12,757
New Caledonia ...	67,668	72,234	47,071	62,165	74,063
Peru ...	59,530	36,568	52,243	70,960	64,881
Philippine Islands ...	178,631	124,816	106,087	102,748	95,120
South Sea Islands (foreign) ...	34,452	39,175	57,790	50,022	44,875
Sweden ...	2,530	4,084	...	...	...
United States ...	200,628	142,274	184,153	145,926	149,449
Other Foreign Countries ...	103,821	61,422	49,988	39,792	51,253
Total Foreign Countries	1,796,928	1,460,820	1,652,143	1,776,423	1,903,174
Total all Countries ...	4,285,472	4,155,557	4,725,326	4,991,581	5,111,957

The figures in the above table represent the tonnage of shipping recorded as having cleared the Commonwealth for the particular countries named. For the purpose of comment, however, countries have been grouped according to larger geographical divisions in Section 4.

SHIPPING TONNAGE ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO VARIOUS COUNTRIES, 1908 TO 1912.

Country.	1908.	1909.	1910.	1911.	1912.
United Kingdom	2,109,666	2,482,784	2,845,076	3,001,141	2,994,876
Canada	138,930	143,531	159,237	162,664	167,390
Fiji	110,906	104,352	103,206	168,319	158,405
Hong Kong	132,197	90,272	53,472	37,035	59,561
India and Ceylon	269,239	243,240	309,384	242,828	236,274
Mauritius	10,824	40,414	52,529	26,396	31,729
New Zealand	1,667,565	1,618,567	1,741,898	1,685,759	2,110,083
Papua	55,601	86,605	98,433	150,279	139,419
South African Union	139,216	256,104	300,210	374,575	172,146
South Sea Islands	108,091	89,048	107,703	100,116	93,189
Straits Settlements	298,914	243,597	246,435	225,460	239,737
Other British Countries	13,389	14,695	16,512	324	3,068
Total British Countries	5,054,538	5,413,209	6,034,095	6,374,896	6,407,877
Africa, Portuguese East	40,715	109,203	115,682	81,032	50,587
Belgium	119,429	140,218	130,394	187,131	180,872
Chile	695,937	381,884	453,982	576,102	685,140
Dutch East Indies	87,243	139,956	177,505	158,957	223,093
France	162,939	177,454	212,534	239,133	141,253
Germany	523,016	555,547	602,962	635,669	777,005
Hawaiian Islands	67,147	64,264	64,540	43,367	50,517
Japan	296,119	227,072	255,730	261,083	253,842
Mexico	53,017	46,118	37,512	30,046	32,202
New Caledonia	125,298	135,484	109,613	133,555	151,328
Norway	29,417	38,506	37,201	40,204	34,715
Peru	106,777	86,859	79,294	103,882	100,363
Philippine Islands	352,673	200,793	134,637	159,351	151,336
South Sea Islands (foreign)	65,351	70,165	95,474	106,900	112,680
Sweden	36,119	50,401	41,231	77,983	48,060
United States	555,253	432,794	522,740	535,134	602,803
Other Foreign Countries	210,163	246,824	225,020	240,376	271,641
Total Foreign Countries	3,526,613	3,103,542	3,299,051	3,609,905	3,867,437
Total all Countries	8,581,151	8,516,751	9,333,146	9,984,801	10,275,314

In respect of these tables it may be pointed out that the statistics for any country do not fully disclose the extent of its shipping communication with particular countries. The reason for this is that vessels are recorded as arriving from, or departing to, a particular country, whereas, as a matter of fact, many regular lines of steamers call and transact business at the ports of several countries in the course of a single voyage. The lines of steamers trading between Australia and Japan, for example, often call at New Guinea, the Philippine Islands, China, etc., but, being intermediate ports, these countries are not referred to in the statistical records. Similarly, in the case of the large mail steamers passing through the Suez Canal, a steamer may call at Colombo, Aden, Port Said, Genoa, Marseilles, London, Antwerp, and Bremerhaven, yet obviously can only be credited as cleared for one of these ports, to the consequent exclusion of all the other ports from the records. Further reference is made in the following paragraphs to the more important of those countries with which the shipping of the Commonwealth is not fully represented in the foregoing tables.

4. General Trend of Shipping.—(i.) *General.* A grouping of countries into larger geographical divisions, as in the following tables, shews more readily the general direction of Australian shipping, and to some extent, avoids the limitations of the records in relation to particular countries, by covering more closely the main trade routes.

It has already been shewn in the opening section of this chapter, that direct comparisons of the annual oversea shipping of the Commonwealth are possible only since the beginning of 1904.

A comparison of the total tonnage of shipping which entered and cleared the Commonwealth during 1912 with similar records for 1908 shews an increase of 1,694,163 tons, or 19.74 per cent., vessels with cargo having increased by 2,193,233 tons, or 30.86 per cent., while vessels in ballast decreased by 499,070 tons, or 33.87 per cent.

(ii.) *Shipping with the United Kingdom and European Countries.* The shipping between the Commonwealth and the United Kingdom and European countries during the past five years shews that steady increase which indicates the consistent development of a well-established trade. The shipping in this direction during 1912 amounted to 4,230,369 tons, or 41.2 per cent. of the total oversea shipping of the Commonwealth, and was recorded against the several countries as follows:—United Kingdom, 2,994,876 tons (70.8 per cent.); Germany, 777,005 tons (18.4 per cent.); France, 141,253 tons (3.3 per cent.); Belgium, 180,872 tons (4.3 per cent.); other European countries, 136,363 tons (3.2 per cent.).

The foregoing figures appear to shew that while the tonnage between the Commonwealth and the United Kingdom increased by 885,210 tons, equal to an increase of 41.96 per cent., the tonnage between the Commonwealth and European continental countries has increased by 339,206 tons, or by 37.85 per cent., or, in other words, that 72.30 per cent. of the increase was credited to the United Kingdom and 27.70 to the latter countries. As already explained, however, no real significance can be attached to these figures, for, in many instances, it must be regarded as almost accidental whether tonnage be recorded against the United Kingdom or against Belgium, Germany, or France.

The failure of the statistical records to present, in all cases, the full measure of the shipping communication between particular countries is illustrated by the case of Italy. Although the mail steamers which pass through the Suez Canal call at Naples and Genoa, and during 1912 embarked or landed at those ports 5018 passengers for or from Australia, and also carried a direct trade valued at £1,062,413 between Italy and the Commonwealth, the records for the year shew only five vessels as passing between the two countries.

(iii.) *Shipping with New Zealand.* The tonnage of shipping between the Commonwealth and New Zealand shews a very satisfactory expansion from 1,667,565 tons in 1908 to 2,110,083 tons in 1912, an increase of 442,518 tons, or 26.54 per cent., during the four years. The shipping with New Zealand represented 20.54 per cent. of the total shipping of the Commonwealth during 1912.

(iv.) *Shipping with Asiatic Countries and Islands in the Pacific.* The total tonnage between the Commonwealth and Eastern countries during 1912 amounted to 1,893,664 tons, or 18.43 per cent. of the whole, representing a decrease of 139,826 tons, or 6.88 per cent., as compared with 1908. This decline is more than covered by the smaller tonnage entered in ballast. In 1908 the tonnage in ballast which entered from Asiatic countries was unusually large, amounting to 413,089 tons, as compared with 104,197 tons in 1912. During the same period the outward tonnage with cargo declined by 14,273 tons and that in ballast by 24,196 tons. The shipping between the Commonwealth and the Philippine Islands has declined from 352,673 tons in 1908 to 151,336 tons in 1912. This has been due mainly to the smaller coal trade from Newcastle. The tonnage between the Commonwealth and Japan, Straits Settlements, Hong Kong, India, and Ceylon has also declined materially. Owing to the limitation of the records, already alluded to, the figures given in the tables do not represent the full volume of the shipping between the Commonwealth and the Philippines. In addition to the shipping recorded to the Philippine Islands, the regular steam lines between the Commonwealth and Japan make Manila a regular port of call, and it is by these vessels that the general trade—apart from the coal

trade—is chiefly carried. The whole of the shipping which was recorded as entering the Commonwealth during 1912 from the Philippines (56,216 tons) was, with the exception of 7472 tons, in ballast, and of the 95,120 tons which was recorded as cleared for that country, 52,740 tons cleared from the coal port of Newcastle. The tonnage between the Commonwealth and Papua has increased rapidly during the past five years. In 1908 the tonnage recorded between these two countries was 55,601 tons, and in 1912 139,419 tons. There has also been a very marked expansion of the shipping to and from the Dutch East Indies during later years, the tonnage having increased from 87,243 tons in 1908 to 223,093 tons in 1912. The shipping with the South Sea Islands, too, shews an expanding trade.

(v.) *Shipping with Africa.* The shipping tonnage recorded between the Commonwealth and African countries during 1912 amounted to 258,849 tons, this tonnage, though only little more than half the tonnage of 1911, represents an increase as compared with 1908 of 33,051 tons. Much of the trade between South Africa and Australia, however, is carried by steamers calling at ports in the former country on their voyages between the Commonwealth and the United Kingdom, and which are not shewn in relation to African ports in the shipping returns. Shipping tonnage with African countries—mainly confined to Cape Colony, Natal, and Portuguese East Africa—has been subject to great fluctuations. From 649,802 tons in 1905 it fell to 225,798 tons in 1908, rose again to 501,789 tons in 1911, falling to 258,849 tons in 1912. An inspection of the following tables, however, shews that these figures are of no significance as an index of the transport requirements between the two countries, inasmuch as of the total tonnage passing between the two countries, 175,020 tons were from Africa to Australia, with only 83,829 tons the other way. Moreover, of the 175,020 tons which entered the Commonwealth from Africa, 151,459 tons, or 86.5 per cent., were represented by vessels in ballast seeking freights from Australian ports.

(vi.) *Shipping with North and Central America.* The shipping of the Commonwealth with these countries during 1912 amounted to 802,395 tons (7.8 per cent. of the whole) representing, as compared with 1908, an increase of 49,269 tons. The 802,395 tons of shipping with North and Central America during 1912 were recorded against the several countries as follows:—United States, 602,803 tons (75.1 per cent.); Canada, 167,390 tons (20.9 per cent.); and Mexico, 32,202 tons (4.0 per cent.).

(vii.) *Shipping with South America.* The shipping between the Commonwealth and South American countries during 1912—979,904 tons—represented an increase of 84,735 tons as compared with 1908. The outward shipping in this direction has been mainly engaged in the carriage of coal and wheat to Chile and Peru. Of the total shipping tonnage between the Commonwealth and South America during 1912, 807,088 tons, or 82.4 per cent., is credited to the coal port of Newcastle, 258,890 tons having entered and 548,198 tons having cleared at that port, while of the same total 68,096 tons entered and 22,562 tons cleared at the port of Sydney. Of the South American countries, Chile is responsible for 685,140 tons (69.9 per cent.); Peru, 100,363 tons (10.2 per cent.); Argentine Republic, 64,073 tons (6.5 per cent.); Brazil, 62,967 tons (6.4 per cent.); Uruguay, 61,476 tons (6.3 per cent.); and Ecuador, 5935 tons (0.7 per cent.).

An important fact, from its bearing on freight rates and its consequent possible effect on the coal trade of New South Wales with South America, is the absence of return freights from that country. Of the 386,366 tons of shipping which entered the Commonwealth from South America during 1912, only thirteen vessels, totalling 31,291 tons, carried cargo.

GENERAL DIRECTION OF THE SHIPPING OF THE COMMONWEALTH, 1908 to 1912.

TONNAGE ENTERED.

Countries.	—	1908.	1909.	1910.	1911.	1912.
United Kingdom & European Countries	Cargo...	1,443,331	1,604,822	1,770,356	1,953,962	2,152,304
	Ballast	142,454	151,792	120,542	68,193	71,746
New Zealand	Cargo...	606,555	610,138	654,215	676,235	751,759
	Ballast	187,933	127,761	112,562	165,511	174,583
Asiatic Countries & Islds. in the Pacific	Cargo...	554,319	620,599	706,226	765,373	761,854
	Ballast	413,089	215,111	156,165	100,500	104,197
Africa	Cargo...	13,506	27,676	30,038	26,718	23,561
	Ballast	133,898	336,605	323,960	368,750	151,459
North and Central America	Cargo...	418,775	350,074	423,021	479,382	560,933
	Ballast	45,034	66,879	43,529	34,239	24,595
South America	Cargo...	9,565	6,189	14,698	13,114	31,291
	Ballast	327,160	243,548	246,508	341,243	355,075
	Cargo...	3,046,051	3,219,498	3,604,554	3,914,784	4,281,702
	Ballast	1,249,628	1,141,696	1,003,266	1,078,436	881,655
Total		4,295,679	4,361,194	4,607,820	4,993,220	5,163,357

TONNAGE CLEARED.

United Kingdom & European Countries	Cargo...	1,414,973	1,732,264	2,019,567	2,190,650	2,006,275
	Ballast	5,195				44
New Zealand	Cargo...	814,667	807,791	920,939	981,126	1,148,166
	Ballast	58,410	72,877	54,182	62,887	35,575
Asiatic Countries & Islds. in the Pacific	Cargo...	998,148	841,078	856,486	932,091	984,875
	Ballast	66,934	49,955	76,409	24,093	42,738
Africa	Cargo...	75,559	89,650	136,042	106,321	83,829
	Ballast	9,635	152			
North and Central America	Cargo...	213,355	144,491	194,697	182,440	204,116
	Ballast	76,902	60,969	53,112	31,783	12,751
South America	Cargo...	545,225	338,304	407,911	476,385	592,248
	Ballast	13,269	17,996	5,981	3,805	1,340
	Cargo...	4,061,927	3,953,578	4,535,642	4,869,013	5,019,509
	Ballast	223,545	201,979	189,684	122,568	92,448
Total		4,285,472	4,155,557	4,725,326	4,991,581	5,111,957

TONNAGE ENTERED AND CLEARED.

Countries.	1908.	1909.	1910.	1911.	1912.	1912 Compared with 1908.
United Kingdom & European Countries	3,005,953	3,488,878	3,910,465	4,212,805	4,230,569	+ 1,224,416
New Zealand	1,667,565	1,618,567	1,741,898	1,885,759	2,110,083	+ 442,518
Asiatic Countries and Islands in the Pacific	2,033,490	1,726,743	1,795,286	1,822,057	1,893,664	- 139,826
Africa	225,798	454,083	490,040	501,789	258,849	+ 33,051
North and Central America	753,126	622,443	720,359	727,844	802,395	+ 49,269
South America	895,219	606,037	675,098	834,547	979,954	+ 84,735
Cargo	7,107,978	7,173,076	8,140,196	8,783,797	9,301,211	+ 2,193,233
Ballast	1,473,173	1,343,675	1,192,950	1,201,004	974,103	- 499,070
Total	8,581,151	8,516,751	9,333,146	9,984,801	10,275,314	+ 1,694,163

5. **Nationality of Oversea Shipping.**—As will be seen from the following table, the greater part of the shipping visiting the Commonwealth is of British nationality. During 1912 British shipping represented 73.13 per cent. of the total tonnage which entered and cleared the Commonwealth.

NATIONALITY OF ALL VESSELS WHICH ENTERED AND CLEARED THE COMMONWEALTH FROM AND TO OVERSEA COUNTRIES, 1908 to 1912.

Nationality.	Tonnage.				
	1908.	1909.	1910.	1911.	1912.
BRITISH—					
Australian ...	657,833	720,183	742,772	848,240	889,285
United Kingdom...	4,715,393	4,470,679	5,252,308	5,511,504	5,299,157
New Zealand ...	926,669	988,006	968,551	1,008,036	1,274,584
Other British ...	18,726	10,628	26,223	38,871	51,199
Cargo ...	5,437,831	5,426,643	6,295,935	6,656,932	6,949,115
Ballast ...	880,790	762,853	693,919	749,719	565,110
Total British ...	6,318,621	6,189,496	6,989,854	7,406,651	7,514,225
Per cent. to total	73.63	72.67	74.89	74.18	73.13
FOREIGN—					
Austro-Hungarian ...	4,341	—	30,059	—	28,689
Danish ...	11,869	8,848	4,010	10,510	5,573
Dutch ...	56,162	132,954	153,255	139,606	120,864
French ...	521,235	559,383	457,676	424,461	356,207
German ...	810,289	845,758	868,263	1,005,986	1,211,738
Italian ...	83,364	86,521	93,978	65,415	51,098
Japanese ...	82,209	79,120	89,358	158,047	252,081
Norwegian ...	463,705	440,727	482,637	582,352	527,121
Russian ...	39,999	46,041	33,145	38,463	63,286
Swedish ...	35,117	49,587	51,601	50,207	37,330
United States ...	106,888	56,148	48,477	67,745	92,605
Other Foreign ...	42,352	22,168	30,833	35,358	14,497
Cargo ...	1,670,147	1,746,433	1,844,261	2,126,865	2,352,096
Ballast ...	592,333	580,822	499,031	451,285	408,993
Total Foreign ...	2,262,530	2,327,255	2,343,292	2,578,150	2,761,089
Per cent. to total	26.37	27.33	25.11	25.82	26.87
Cargo ...	7,107,978	7,173,076	8,140,196	8,783,797	9,301,211
Per cent. to total...	82.83	84.22	87.22	87.97	90.52
Ballast ...	1,473,173	1,343,675	1,192,950	1,201,004	974,103
Per cent. to total...	17.17	15.78	12.78	12.03	9.48
Grand Total ...	8,581,151	8,516,751	9,333,146	9,984,801	10,275,314

The tonnage of Australian-owned vessels engaged in the oversea trade represents 8.65 per cent. of the total, and the tonnage of New Zealand vessels 12.40 per cent. Both are engaged mainly in the trade with New Zealand and eastern countries. An examination of the figures in the above table shews that, of the increase in tonnage in 1912 as compared with 1908, viz., 1,694,163 tons, 1,195,604 tons (70.57 per cent.) were British, and 498,559 tons (29.43 per cent.) were foreign, or, in other words, the British tonnage in 1912 shewed an increase of 18.92 per cent. over 1908, while that of foreign countries increased by 22.04 per cent. The proportion of British tonnage in the total shipping which entered and cleared the Commonwealth, though shewing a decline during the last two years, was slightly larger in 1912 than in 1909.

The relative proportion of British and foreign tonnage which entered and cleared the Commonwealth during the last five years, apart from tonnage in ballast, is given below. From these figures, which may be considered to indicate more closely the proportion of the actual carrying trade done, than does the total tonnage, it will be seen that the proportion of British tonnage was lower during 1912 than in any other year shewn. Since 1904, when the shipping statistics were first compiled in their present form, the proportion of British ships entered and cleared with cargo has only once been lower, viz.; in the year 1906, when the proportion of British tonnage was 74.42 per cent.

**PROPORTION OF TONNAGE OF BRITISH AND FOREIGN NATIONALITY ENTERED
AND CLEARED THE COMMONWEALTH WITH CARGO, 1908 to 1912.**

Nationality.				1908.	1909.	1910.	1911.	1912.
British	...	...	...	76.50	75.65	77.34	75.79	74.71
Foreign	...	...	...	23.50	24.35	22.66	24.21	25.29
Total	...	...	...	100.00	100.00	100.00	100.00	100.00

That the proportion of foreign tonnage should increase is to be expected as the natural corollary of the extension of the trade of the Commonwealth with foreign countries. This is particularly patent in regard to Germany and France. Both of these countries desire to increase their mercantile marine, and it is therefore natural that the increased direct trade between themselves and Australia should be carried by their own vessels rather than by the vessels of a third country. The Royal Dutch Packet Company has established a line of steamers between Java and other islands of the East Indies and Australia. The Hungarian Levant Steamship Company also maintains a cargo service between the Commonwealth and Adriatic ports.

The more important competitors for the Australian shipping trade among the foreign nations are France, Germany, and Norway, and it is therefore of interest to consider the general direction of their activity. It is well to bear in mind, when comparing the figures in the table on the next page, that the French shipping from and to France and to New Caledonia is practically identical with the steamers of the Messageries Maritimes, which maintain a regular service between France and New Caledonia *via* Australian ports, and that the German shipping from and to Germany consists mainly of the vessels of two lines, the Norddeutscher Lloyd, and the German-Australian Steamship Company, which have had regular and frequent services to Australian ports for many years.

SHIPPING OF PRINCIPAL FOREIGN NATIONS BETWEEN AUSTRALIA AND OTHER COUNTRIES DURING 1912.

Countries.	Nationality.					
	French.		German.		Norwegian.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
EUROPEAN COUNTRIES—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
United Kingdom ...	12,778	27,671	6,099	34,532	4,576	75,569
Belgium ...	5,789	...	...	31,006	...	5,754
France ...	42,897	40,102	...	...	...	...
Germany ...	...	...	416,261	328,163	1,890	...
Norway ...	...	...	5,574	...	22,252	44
Sweden ...	...	...	2,778	...	22,272	...
Other European Countries ...	3,886	...	2,184	3,528	1,709	...
NEW ZEALAND ...	...	...	23,917	22,481	5,449	16,330
ASIATIC COUNTRIES AND ISLANDS IN THE PACIFIC—						
Japan ...	...	...	25,489	23,669	...	...
New Caledonia ...	58,694	61,735	...	...	...	1,547
South Sea Islands ...	8,100	9,000	4,180	6,843	11,708	10,008
Straits Settlements ...	...	...	...	13,889	897	...
Other Asiatic Countries ...	...	...	4,639	53,517	1,024	16,826
AFRICAN COUNTRIES—						
Africa, Portuguese East ...	...	...	1,512	...	5,153	1,131
South African Union ...	...	...	5,268	...	23,149	6,990
Other African Countries ...	1,907	...	...	...	3,534	1,054
NTH. AMERICAN COUNTRIES—						
United States ...	27,362	8,646	62,722	4,022	35,152	8,653
Other Nth. Amer. Countries... ..	...	...	8,299	...	12,193	5,201
STH. AMERICAN COUNTRIES—						
Chile ...	3,887	24,249	23,210	75,571	25,379	91,543
Peru ...	3,891	1,969	1,824	1,696	15,618	24,411
Other South American Countries ...	13,644	...	18,865	...	61,868	8,237
With Cargo ...	144,665	161,652	510,496	598,895	101,283	259,641
In Ballast ...	38,170	11,720	102,325	22	152,540	13,657
Total ...	182,835	173,372	612,821	598,917	253,823	273,298

A further analysis is appended, distinguishing between steam and sailing vessels of British and foreign nationality, which entered and cleared the Commonwealth during the years 1908-12. Steam tonnage during 1912 was 2,010,012 tons greater than in 1908, 1,360,838 tons (*i.e.*, 67.70 per cent.) of the increase being British, and 649,174 tons (*i.e.*, 32.30 per cent.) being foreign. The tonnage of sailing vessels shews a decrease during the same period of 315,849 tons, British tonnage having fallen by 165,234 tons, and that of foreign nations by 150,615 tons.

As might be expected, the proportion of sailing vessels engaged in carrying the trade of the Commonwealth is shewn to be rapidly decreasing, having fallen during the period under review from 19 per cent. to 12 per cent. of the total tonnage. In this branch of shipping the foreign element is stronger than the British.

STEAM AND SAILING VESSELS ENTERED AND CLEARED, 1908 to 1912.

Description and Nationality of Vessels.	1908.		1909.		1910.		1911.		1912.	
	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.	Ton-nage.	Percen-tages.
Steam—										
British ...	5,723,288	82	5,583,448	81	6,432,290	82	6,912,065	81	7,084,126	79
Foreign ...	1,259,714	18	1,325,523	19	1,436,917	18	1,609,048	19	1,908,888	21
Total steam	6,983,002	100 (81)	6,908,971	100 (81)	7,869,207	100 (84)	8,521,133	100 (85)	8,993,014	100 (88)
Sailing—										
British ...	595,333	37	606,048	38	557,564	38	494,566	34	430,099	34
Foreign ...	1,002,816	63	1,001,732	62	906,375	62	969,102	66	852,201	66
Total sailing	1,598,149	100 (19)	1,607,780	100 (19)	1,463,939	100 (16)	1,463,668	100 (15)	1,282,300	100 (12)
Steam and Sailing—										
British ...	6,318,621	74	6,189,496	73	6,989,854	75	7,406,651	74	7,514,225	73
Foreign ...	2,262,530	26	2,327,255	27	2,343,292	25	2,578,150	26	2,761,089	27
Total ...	8,581,151	100	8,516,751	100	9,333,146	100	9,984,801	100	10,275,314	100

6. Tonnage in Ballast.—The following table shews the tonnage of oversea vessels which entered and cleared the Commonwealth in ballast during the years 1908-12. Of the total British tonnage which entered during 1912, 13.31 per cent. was in ballast, and of foreign tonnage 27.34 per cent. was in similar condition. Of the total tonnage which entered the Commonwealth during 1912, 17.08 per cent. was in ballast, while of the tonnage cleared 1.81 per cent. only was without cargo.

TONNAGE ENTERED AND CLEARED IN BALLAST, 1908 to 1912.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
1908 ...	794,745	454,883	1,249,628	86,045	137,500	223,545
1909 ...	667,478	474,218	1,141,696	95,375	106,604	201,979
1910 ...	603,511	399,755	1,003,266	90,408	99,276	189,684
1911 ...	668,599	409,837	1,078,436	81,120	41,448	122,568
1912 ...	503,041	378,614	881,655	62,069	30,379	92,448

PROPORTION OF TOTAL BRITISH AND FOREIGN TONNAGE WHICH ENTERED AND CLEARED IN BALLAST, 1908 to 1912.

Year.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
1908 ...	25.05	40.51	29.09	2.74	12.07	5.22
1909 ...	21.06	39.80	26.18	3.16	9.39	4.86
1910 ...	17.52	34.38	21.77	2.55	8.41	4.01
1911 ...	18.09	31.61	21.60	2.19	3.23	2.46
1912 ...	13.31	27.34	17.08	1.66	2.21	1.81

Vessels in search of freights arrive in Australia from all parts of the world. The tonnage which entered each State of the Commonwealth, in ballast, during 1912, was as follows:—

**TONNAGE OF OVERSEA VESSELS IN BALLAST WHICH ENTERED EACH STATE
OF THE COMMONWEALTH DURING THE YEAR 1912.**

State ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.	C'wealth.
Tonnage ...	617,471	8,045	5,936	97,804	137,779	12,238	2,382	881,655
Percentage of total ...	70.04	0.91	0.67	11.09	15.63	1.39	0.27	100.00

The large exports of coal from New South Wales afford special inducements to vessels in search of freights. During 1912, 617,471 tons, or 70.04 per cent. of all ballast tonnage arriving in Australia, entered in New South Wales, 510,744 tons having entered at the coal port of Newcastle. The tonnage in ballast into New South Wales is mainly for coal cargo, into South Australia for wheat, and into Western Australia for timber. The relatively large tonnage in ballast recorded in Tasmania is mainly due to French vessels calling at Hobart for orders.

§ 3. Shipping of Ports.

1. Shipping of Ports.—Appended is an abstract of the total shipping tonnage—over-sea and coastwise—which entered the more important ports of Australia during the year 1912, together with similar information in regard to some of the ports of New Zealand and of the United Kingdom for the same year :—

SHIPPING OF PORTS, AUSTRALIA AND VARIOUS COUNTRIES, 1912.

Port.	Tonnage Entered.	Port.	Tonnage Entered.
AUSTRALIA—		ENGLAND AND WALES—	
Sydney ...	8,494,059	London ...	18,746,936
Melbourne ...	6,188,566	Liverpool (inc. Birkenhead) ...	15,147,198
Newcastle ...	4,326,438	Cardiff ...	11,493,422
Port Adelaide ...	3,175,796*	Tyne ports ...	10,997,315
Brisbane ...	2,454,684	Southampton ...	7,288,261
Fremantle ...	2,173,691	Hull ...	5,469,490
Townsville ...	1,277,151	Plymouth ...	4,665,488
Albany ...	1,122,968	Middlesbrough ...	3,253,830
Hobart ...	859,701	Newport ...	3,230,616
Mackay ...	758,858	Swansea ...	2,992,748
Rockhampton ...	746,962	Sunderland ...	2,980,641
Cairns ...	668,903	Manchester ...	2,554,283
Port Pirie ...	596,042	Dover ...	2,476,590
Geelong ...	523,431	Blyth ...	2,240,946
Bowen ...	513,751	Grimsby ...	2,050,091
Thursday Island ...	387,813	SCOTLAND—	
Burnie ...	356,499	Glasgow ...	5,529,820
NEW ZEALAND—		Leith ...	2,493,188
Wellington ...	3,135,152	IRELAND—	
Lyttelton ...	2,247,234	Cork (inc. Queenstown) ...	4,185,795
Auckland ...	1,882,213	Belfast ...	3,347,588
Dunedin ...	1,074,441	Dublin ...	2,628,542

* Exclusive of coastal shipping, particulars of which are not available.

From the figures above it may be seen that the shipping business of the port of Sydney is only exceeded by that of four ports in the United Kingdom, viz., London, Liverpool, Cardiff, and the Tyne.

§ 4. Vessels Built and Registered.

1. **Vessels Registered.**—The following table shews the number and net tonnage of steam, sailing, and other vessels not self-propelled, on the registers of the various States and of the Northern Territory of the Commonwealth of Australia:—

VESSELS ON THE REGISTER, 31st DECEMBER, 1912.

State.	Steam.				Sailing.				Barges, Hulks, Dredges, etc., not Self-propelled.		Total.	
	Dredges and Tugs.		Other.		Fitted with Auxiliary Power.		Other.					
	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.	No.	Net Tons.
New South Wales ...	43	1,541	585	97,382	73	1,299	362	32,057	56	8,724	1,119	141,003
Victoria ...	28	3,286	172	116,236	5	266	137	12,267	80	31,144	422	163,199
Queensland ...	25	2,600	79	12,493	16	164	154	3,149	41	5,861	315	24,267
South Australia ...	23	748	93	47,752	2	55	99	4,131	72	12,769	289	65,455
Western Australia ...	10	145	45	20,288	1	100	308	5,821	22	2,455	386	28,809
Tasmania ...	4	295	60	8,227	18	523	133	5,886	5	2,112	220	17,043
Northern Territory	...	...	4	66	...	...	38	525	...	...	42	591
Total ...	133	8,615	1,038	302,444	115	2,407	1,231	63,836	276	63,065	2,793	440,367

2. **Vessels Built.**—The following tables shew the number and tonnage of vessels built in the Commonwealth during each of the years 1901-1912, so far as such information can be ascertained from the Shipping Registers of the various States. The Merchant Shipping Act, under which vessels are registered in Australia, however, does not make it compulsory to register vessels under 15 tons burthen if engaged in river or coastal trade. Larger vessels are also exempt from registration if not engaged in trade. Yachts and small trading vessels may be, and frequently are, registered at the request of the owners. As the Shipping Registers have been, and are, the source of information, it follows that the figures given below will be subject to additions in the future, inasmuch as vessels already built may be added to the register at some future date.

VESSELS BUILT IN THE COMMONWEALTH, 1901 to 1912.

NUMBER.

Year.	Steamers Built of—					Oil Motor Vessels.	Sailing.	Pontoon, Dredges, etc.	Total.
	Wood.	Iron.	Steel.	Composite.	Total.				
1901 ...	18	...	1	...	19	4	37	...	60
1902 ...	28	...	...	1	29	8	72	1	110
1903 ...	15	1	2	...	18	17	149	2	186
1904 ...	14	...	1	1	16	11	75	...	102
1905 ...	15	...	4	...	19	22	15	2	58
1906 ...	12	1	1	...	14	21	18	3	56
1907 ...	17	...	...	1	18	12	32	1	63
1908 ...	13	...	3	...	16	18	16	2	52
1909 ...	10	...	...	...	10	11	29	1	51
1910 ...	9	3	2	...	14	9	32	2	57
1911 ...	13	1	1	1	16	6	34	4	60
1912 ...	6	...	2	1	9	2	24	...	35

VESSELS BUILT IN THE COMMONWEALTH, 1901 TO 1912—continued.

TONNAGE.

Year.	Steamers.		Oil Motor Vessels.		Sailing.		Pontoons, Dredges, etc.		Total.	
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.
1901 ...	2,270	1,251	41	33	1,052	927	...	...	3,363	2,211
1902 ...	2,863	1,654	96	82	2,374	2,052	64	64	5,397	3,852
1903 ...	1,569	956	624	455	3,061	2,613	385	350	5,639	4,374
1904 ...	1,994	1,240	134	100	1,607	1,388	...	...	3,735	2,728
1905 ...	2,444	1,462	291	214	344	293	967	896	4,046	2,865
1906 ...	1,426	735	201	141	471	401	546	536	2,644	1,813
1907 ...	2,381	1,305	108	93	772	713	152	145	3,413	2,256
1908 ...	2,492	1,317	265	199	470	395	260	260	3,487	2,171
1909 ...	1,351	735	180	148	707	592	98	98	2,336	1,573
1910 ...	1,944	1,105	102	92	760	644	405	363	3,211	2,204
1911 ...	2,068	1,100	180	103	757	672	762	720	3,717	2,595
1912 ...	1,619	1,075	45	37	565	491	...	...	2,229	1,603

§ 5. Interstate Shipping.

1. **Total Vessels and Tonnage.**—In the following tables are shewn the number and tonnage of vessels recorded as having entered each State of the Commonwealth from any other State therein, and similarly, the number and tonnage clearing from each State to other Commonwealth States. The table gives results for the quinquennial intervals since 1891 and for 1912. The shipping on the Murray River, between the States of New South Wales, Victoria and South Australia, is not included :—

INTERSTATE SHIPPING, 1891 to 1912.—NUMBER OF VESSELS.

ENTERED.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales ...	1,692	1,470	1,611	1,575	1,791	1,915
Victoria ...	1,525	1,280	1,502	1,561	1,648	1,674
Queensland ...	376	439	430	478	567	606
South Australia ...	611	823	650	752	789	779
Western Australia ...	149	520	446	335	415	401
Tasmania ...	680	567	713	840	864	900
Northern Territory ...	*	*	*	*	39	41
Total ...	5,033	5,099	5,352	5,541	6,113	6,316

CLEARED.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales ...	1,415	1,275	1,473	1,417	1,728	1,858
Victoria ...	1,733	1,380	1,569	1,610	1,765	1,860
Queensland ...	389	455	395	431	572	632
South Australia ...	716	918	756	802	900	841
Western Australia ...	158	496	456	363	394	386
Tasmania ...	679	573	694	809	836	874
Northern Territory ...	*	*	*	*	40	37
Total ...	5,090	5,097	5,343	5,432	6,235	6,488

INTERSTATE SHIPPING, 1891 TO 1912.—NUMBER OF VESSELS—contd.
TOTAL.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales ...	3,107	2,745	3,084	2,992	3,519	3,773
Victoria ...	3,258	2,660	3,071	3,171	3,413	3,534
Queensland ...	765	894	825	969	1,139	1,238
South Australia ...	1,327	1,741	1,406	1,554	1,689	1,620
Western Australia ...	307	1,016	902	698	809	787
Tasmania ...	1,359	1,140	1,407	1,649	1,700	1,774
Northern Territory ...	*	*	*	*	79	78
Total ...	10,123	10,196	10,695	10,973	12,348	12,804

* Included with South Australia.

INTERSTATE SHIPPING, 1891 TO 1912.—TONNAGE.
ENTERED.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales	1,617,559	1,589,753	2,031,089	2,456,269	3,318,605	3,525,929
Victoria ...	1,392,818	1,486,624	1,956,900	2,473,771	2,959,551	3,040,071
Queensland ...	267,753	343,026	545,469	692,354	840,052	872,964
South Australia ...	658,600	1,051,893	1,124,499	1,582,802	1,970,490	2,130,621
Western Australia	237,708	683,918	973,474	968,664	1,378,800	1,427,936
Tasmania ...	371,205	281,029	485,023	721,240	895,546	913,595
North'm Territory	*	*	*	*	64,518	72,880
Total ...	4,545,643	5,436,243	7,116,454	8,895,100	11,427,562	11,983,996

CLEARED.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales	1,314,339	1,341,635	1,856,501	2,177,496	3,209,723	3,472,206
Victoria ...	1,692,189	1,599,065	2,038,424	2,617,966	3,233,531	3,503,022
Queensland ...	302,723	359,046	440,659	578,561	855,776	920,965
South Australia ...	829,616	1,203,830	1,365,668	1,772,356	2,343,269	2,313,982
Western Australia	269,256	687,632	977,846	1,051,629	1,303,359	1,288,391
Tasmania ...	352,406	250,557	433,735	636,944	728,170	784,529
North'm Territory	*	*	*	*	66,357	63,197
Total ...	4,760,529	5,441,765	7,112,833	8,834,952	11,740,185	12,346,292

TOTAL.

State.	1891.	1896.	1901.	1906.	1911.	1912.
New South Wales	2,931,898	2,931,388	3,887,590	4,633,765	6,528,328	6,998,135
Victoria ...	3,085,007	3,085,689	3,995,324	5,091,737	6,193,082	6,513,093
Queensland ...	570,476	702,072	986,128	1,270,915	1,695,828	1,793,929
South Australia ...	1,488,216	2,255,723	2,490,167	3,355,158	4,313,759	4,444,603
Western Australia	506,964	1,371,550	1,951,320	2,020,293	2,682,159	2,716,327
Tasmania ...	723,611	531,586	918,758	1,358,184	1,623,716	1,698,124
North'm Territory	*	*	*	*	130,875	136,077
Total ...	9,306,172	10,878,008	14,229,287	17,730,052	23,167,747	24,330,288

* Included with South Australia.

The figures presented in the above table include oversea vessels—largely mail boats—passing from one State to another. This renders the results somewhat unsatisfactory.

In the earlier part of this section attention was drawn to the custom in vogue prior to Federation of recording vessels from or to "oversea countries via other Commonwealth States" as *direct* from or to the oversea country. At each port in Australia these vessels were, on the inward voyage (to Australia), entered as from the oversea country, and cleared to the next Australian port as "interstate"; on the return journey—the outward voyage—they were entered as "interstate," and cleared as for the oversea country. In order to preserve the continuity of the records of the shipping communication of the several States with oversea countries this method has been followed in continuation of the pre-existing practice, excepting that vessels arriving or departing via other Commonwealth States are now so recorded instead of as "direct."

From the above it will be seen that while certain movements of the vessels referred to are included in the interstate shipping, other movements of the same vessels, between the same ports, are not so included.

To ascertain the aggregate movement of shipping between the States during the year 1912, including the total interstate movements of oversea vessels, the figures in the following table must be added to those of the preceding one:—

SHIPPING ENTERED AND CLEARED FROM AND TO OVERSEA COUNTRIES VIA OTHER COMMONWEALTH STATES, 1912.

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	
New South Wales ...	590	2,116,174	455	1,725,540	1,045	3,841,714	
Victoria ...	465	1,684,762	426	1,666,748	891	3,351,510	
Queensland ...	204	805,662	186	769,515	390	1,575,177	
South Australia ...	224	896,817	188	779,868	412	1,676,685	
Western Australia ...	6	12,907	29	72,906	35	85,813	
Tasmania ...	9	20,544	31	159,945	40	180,489	
Northern Territory ...	...	...	1	46	1	46	
Total ...	1912	1,498	5,536,866	1,316	5,174,568	2,814	10,711,434
	1906	1,045	3,349,086	1,107	3,442,747	2,152	6,791,783

2. **Total Interstate Movement of Shipping.**—From the foregoing it has been seen that the interstate movement of shipping includes two very different elements, viz.:—(i.) Oversea ships moving from State to State, and (ii.) the movement of ships engaged solely in the interstate carrying trade. These two elements are approximately as follows:—

TOTAL INTERSTATE MOVEMENT OF SHIPPING, 1908 to 1912.

	1908.	1909.	1910.	1911.	1912.
	Tons.	Tons.	Tons.	Tons.	Tons.
Oversea vessels moving interstate ...	8,258,018	8,204,858	9,223,166	10,049,659	10,711,434
Vessels solely interstate	5,961,617	5,850,749	6,384,108	6,548,069	6,809,428
Total ...	14,219,635	14,055,607	15,607,274	16,597,728	17,520,862

The following table shews the number and tonnage of vessels which entered and cleared each State during 1912, including the coastal movements of oversea vessels :—

INTERSTATE SHIPPING OF EACH STATE, 1912.

State.	Entered.		Cleared.		Total.		
	Vessels.	Tonnage.	Vessels.	Tonnage	Vessels.	Tonnage.	
New South Wales	2,505	5,642,103	2,313	5,197,746	4,818	10,839,849	
Victoria	2,139	4,724,833	2,286	5,169,770	4,425	9,894,603	
Queensland	810	1,678,626	818	1,690,480	1,628	3,369,106	
South Australia	1,003	3,027,438	1,029	3,093,850	2,032	6,121,288	
Western Australia	407	1,440,843	415	1,361,297	822	2,802,140	
Tasmania	909	934,139	905	944,474	1,814	1,878,613	
Northern Territory	41	72,880	38	63,243	79	136,123	
Total...	1912	7,814	17,520,862	7,804	17,520,860	...	...
	1906	6,586	12,244,136	6,539	12,277,699	...	...

3. **Vessels Engaged Solely in Interstate Trade.**—The elimination of the element of oversea vessels, included in the interstate shipping returns, cannot be accurately effected; nevertheless, a close approximation is furnished if it be assumed that vessels *entered* in the several States as from “oversea countries via other Commonwealth States” have really been *cleared* from other States as “interstate,” and further, that the vessels *cleared* to “oversea countries via other Commonwealth States” have likewise been *entered* as “interstate.” Applying this suggestion, and so eliminating all interstate movements of oversea vessels, the number and tonnage of vessels engaged solely in the interstate trade during the years 1908 to 1912 will be found to be as follows :—

NUMBER AND TONNAGE OF VESSELS ENGAGED SOLELY IN INTERSTATE TRADE, 1908 to 1912.

Year.					Entered.		Cleared.	
					No.	Tons.	No.	Tons.
1908	...	...	...	...	4,706	5,961,617	4,654	5,916,339
1909	...	...	...	...	4,375	5,850,749	4,353	5,854,313
1910	...	...	...	...	4,645	6,384,108	4,674	6,471,566
1911	...	...	...	...	4,794	6,548,069	4,811	6,570,019
1912	...	...	...	...	5,000	6,809,428	4,990	6,809,426

This treatment cannot be extended to the individual States, as the records do not disclose the particular relationship of the States concerned.

4. **Interstate and Coastal Services.**—The foundation of the coastal steamship services in Australia dates back to the year 1851, when a regular trade was established between Melbourne and Geelong by the small screw steamer *Express*. Early in the fifties a company was formed in Tasmania with a capital of £10,000 for the purpose of purchasing steamboats, and employing them in the carriage of passengers and goods between Hobart

and Melbourne. This service was commenced in 1852, and was thus the first regular interstate service in Australia. About this time the great influx of population and the increase in commerce, caused chiefly by the gold discoveries, emphasised the desirability of establishing more regular and quicker means of communication between the principal ports of Australia, and in 1862 the regular interstate service between New South Wales and Victoria was inaugurated by the s.s. *You Yangs*, which was put into commission in regular service between Melbourne, Sydney, and Newcastle. In 1875 a company was formed in Adelaide for the purpose of supplying suitable steamers for the requirements of the trade between Adelaide and Melbourne. The first two steamers of the company were named the *South Australian* and the *Victorian*, and were small vessels of only 400 tons burthen. From the start success attended these enterprises, and the services thus initiated were rapidly extended and their operations broadened. Numerous other companies were formed to cope with the increasing trade between ports in the Commonwealth, and the companies engaged from time to time added to their fleets of steamers by the acquisition of more modern and rapid vessels, until at the end of the year 1912 the total net tonnage owned by the twenty-four companies from whom returns have been received amounted to 179,996 tons. A summary of the various mail services carried on during the year 1912 is given in Section XVIII. of this work.

The subjoined table gives particulars, so far as they are available, of all steamships engaged in regular interstate or coastal services at the end of each of the years 1901 and 1908 to 1912. The figures for 1908 and subsequent years include particulars relating to a number of smaller companies which did not supply returns for 1901, though they were, for the most part, carrying on business in that year.

PARTICULARS OF STEAMSHIPS ENGAGED IN REGULAR INTERSTATE AND COASTAL SERVICES IN THE COMMONWEALTH, 1901 and 1908 to 1912.

Particulars.		1901.	1908.	1909.	1910.	1911.	1912.
Number of companies making returns	...	11	23	23	24	24	*24
Number of steamships	...	113	175	181	180	178	180
Tonnage	Gross	184,574	261,862	283,276	291,470	288,181	311,144
	Net	114,080	156,502	168,206	172,410	170,062	179,996
Horse-power	Nominal	18,237	25,582	28,477	29,128	29,456	32,520
	Indicated	122,519	192,140	238,610	245,608	249,388	276,703
Number of passengers for which licensed to carry	1st class	4,617	7,100	7,087	7,041	8,616	9,084
	2nd class	...	...	...	...	...	...
	steerage	4,490	6,156	6,460	6,395	6,256	6,376
Complement of Crew	Masters and officers	403	575	598	600	590	604
	Engineers	332	471	495	499	491	509
	Crew	2,875	4,121	4,347	4,440	4,369	4,609

* See letterpress above.

5. Lighthouses and Lights on the Coast of the Commonwealth.—See Year Book No. 2.

6. Ports of the Commonwealth.—See Year Book No. 3.

§ 6. Shipwrecks.

The following statement shows the number and tonnage of vessels wrecked, or otherwise lost, on the coast of the Commonwealth, or under the jurisdiction of the several States, during the years 1901 and 1904 to 1912 :—

NUMBER AND TONNAGE OF VESSELS WRECKED,* 1901 and 1904 to 1912.

Year.	Class of Vessel.	Number and Tonnage of Vessels.										Passengers and Crew.	Lives Lost.
		Under 50 tons.		50 to 500 tons.		500 to 2000 tons.		Over 2000 tons.		Total.			
		No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.		
1901	Steam ...	7	189	5	949	2	2,811	...	...	14	3,949	250	40
	Sailing ...	11	217	6	785	5	5,800	...	...	22	6,802	172	10
	Total ...	18	406	11	1,734	7	8,611	...	...	36	10,751	422	50
1904	Steam ...	1	35	2	204	1	886	1	3,702	5	4,827	363	31
	Sailing ...	14	238	6	765	5	4,646	1	2,413	26	8,062	227	59
	Total ...	15	273	8	969	6	5,532	2	6,115	31	12,889	590	90
1905	Steam ...	3	49	2	594	...	...	1	3,325	6	3,968	417	...
	Sailing ...	10	160	5	775	3	3,678	1	2,176	19	6,789	160	57
	Total ...	13	209	7	1,369	3	3,678	2	5,501	25	10,757	577	57
1906	Steam ...	4	89	2	154	...	...	1	2,415	7	2,658	60	12
	Sailing ...	5	77	3	276	1	1,725	2	5,022	11	7,100	105	1
	Total ...	9	166	5	430	1	1,725	3	7,437	18	9,758	165	13
1907	Steam ...	3	71	4	916	3	3,572	...	...	10	4,559	204	16
	Sailing ...	8	162	6	421	5	6,895	...	...	19	7,478	170	29
	Total ...	11	233	10	1,337	8	10,467	...	...	29	12,037	374	45
1908	Steam ...	6	137	7	816	2	2,930	2	5,585	17	9,468	299	37
	Sailing ...	56	775	3	276	3	4,074	1	2,062	63	7,187	348	219
	Total ...	62	912	10	1,092	5	7,004	3	7,647	80†	16,655	647	256
1909	Steam ...	1	48	3	359	1	1,382	1	2,286	6	4,075	131	40
	Sailing ...	6	163	3	362	2	2,681	...	...	11	3,206	88	6
	Total ...	7	211	6	721	3	4,063	1	2,286	17	7,281	219	46
1910	Steam ...	1	34	5	941	1	958	2	9,307	9	11,240	624	2
	Sailing ...	5	115	2	205	2	3,095	...	...	9	3,415	94	20
	Total ...	6	149	7	1,146	3	4,053	2	9,307	18	14,655	718	22
1911	Steam ...	4	109	5	681	3	5,194	...	...	12	5,984	275	161
	Sailing ...	7	103	4	642	4	5,100	...	...	15	5,845	128	25
	Total ...	11	212	9	1,323	7	10,294	...	...	27	11,829	403	186
1912	Steam ...	1	11	6	866	...	...	1	2,182	8	3,059	227	151
	Sailing ...	4	44	3	407	5	7,836	...	...	12	8,287	111	19
	Total ...	5	55	9	1,273	5	7,836	1	2,182	20	11,346	338	170

* In some cases the vessels included in the above return were subsequently recovered. † The large number of wrecks during 1905 was due to cyclones on the north-west coast of Western Australia, destroying a large number of the pearling vessels.

SECTION XVII.

ROADS AND RAILWAYS.

§ 1. Roads and Bridges.

1. Introduction.—In Year Books No. 1 (pages 541 to 551) and No. 2 (pages 675 to 685), a brief historical account was given of the construction and development of roads in Australia. It is not proposed to repeat that account in the present issue of the Year Book.

2. Expenditure on Roads and Bridges.—Figures shewing the total expenditure on roads and bridges in the States are not available. The subjoined statement, however, gives the amounts of total loan expenditures by the States Government up to the 30th June, 1913:—

ROADS AND BRIDGES.—TOTAL LOAN EXPENDITURE OF EACH STATE AND OF THE COMMONWEALTH UP TO THE 30th JUNE, 1913.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.*	C'wealth.
Expenditure	£1,839,076	£176,475	£923,656	£1,464,736	£301,244	£4,023,274	£8,728,461

* Including harbours, rivers, and lighthouses.

The following table shews the annual expenditure from loans on roads and bridges by the central Governments in each State and in the Commonwealth during the year 1901 and from 1908 to 1913:—

ROADS AND BRIDGES.—LOAN EXPENDITURE BY STATE GOVERNMENTS, 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1901-2 ...	150,777	47,104	...	185	740	77,536 ¹	276,342
1908-9 ...	...	237	...	...	8,120	136,674	145,031
1909-10 ...	...	50	...	...	24,117	...	24,167 ³
1910-11 ...	...	183	...	...	52,296	80,816	133,295
1911-12 ...	...	...	...	...	35,414	145,556	180,970
1912-13 ...	53,263	...	...	...	37,037	183,625 ⁴	273,925

1. For the calendar year 1902. 2. Not available. 3. Exclusive of Tasmania.
4. See note * to previous table.

The two tables given above show only a small proportion of the actual expenditure upon roads and bridges in the different States, for the reason that (a) there have been large expenditures from revenue, both by the central Governments and by local authorities, and (b) the State Governments have in many cases voted grants and subsidies on the amount of rates collected, and have issued loans to local authorities either for the express purpose of the construction of roads and bridges or for the general purpose of public works construction. Returns of expenditure, where available, are given below for each State. Although no revenue is now derived directly from roads and bridges, they are indirectly of great value to the community, forming, next to railways and public lands, the most considerable item of national property.

3. **New South Wales.**—The control of all roads, bridges, and ferries in New South Wales is now regulated by the Local Government Act 1906, which came into force on the 1st January, 1907 (see Section xxvi. *Local Government*). Under the provisions of this Act, the eastern and central divisions of the State are divided into shires and municipalities for the general purposes of local government, for the endowment of which a sum of not less than £150,000 is payable annually out of the consolidated revenue on the basis of a percentage subsidy on the proceeds of the general rates received by the District Councils. The control of all roads, bridges, and ferries (except those proclaimed "National" and those in the unincorporated areas of the Western Division) has been transferred from the Roads Department to the respective shires and municipal councils, who are now responsible for their construction and maintenance. Up to December, 1912, 38 miles of roads, 273 bridges, 54 wharves, 99 jetties, and 14 ferries have been proclaimed as "National" works. Power is given to construct new roads, to widen or close existing roads, to make by-laws for the regulation of traffic, etc.; in the case of the acquisition of land for the purpose of constructing new roads or of widening existing roads, the provisions of the Roads Act 1902 are incorporated. The Minister for Works is empowered to pay subsidies to the local authorities to maintain the roads. The roads leading to and within areas of lands which are made available for closer settlement will be constructed by the Government prior to transfer to the shires, as also will roads required mainly for tourists in districts not likely to produce revenue in rates to the local authorities.

(i.) *Principal Main Roads.* The four principal main roads in New South Wales run in the same direction as, and are roughly contiguous to, the four state-owned main railway lines. (a) *The Southern Road*, 385 miles in length, runs from Sydney to Albury, and before the days of railway construction, formed part of the highway over which the interstate traffic between Melbourne and Sydney used to flow. (b) *The South Coast Road*, 250 miles long, runs from Campbelltown along the top of the coast range and across the Illawarra district as far as Bega, from which place it extends as a minor road to the southern limits of the State. (c) *The Western Road*, 513 miles long, runs through Bathurst, Orange, and many other important towns as far as Bourke, on the Darling River. (d) *The Northern Road*, 405 miles in length, runs from Morpeth, near Newcastle, as far as Maryland, on the Queensland border.

(ii.) *Length and Classification of Roads and Bridges.* The length of roads in the State (exclusive of 38 miles proclaimed as "National works") in 1913 was approximately 94,796 miles, of which 9762 miles were controlled by municipalities, 79,079 by the shires, and 5945 miles were in the unincorporated areas of the Western Division. The following table gives particulars for the year 1912-13 of roads classified according to whether metalled, etc., formed only, cleared only, or natural surface:—

NEW SOUTH WALES.—APPROXIMATE LENGTH OF ROADS, 1912-13.

Classification.				Metalled. Ballasted, Gravelled etc.	Formed only.	Cleared only.	Natural surface.	Total.
				Miles.	Miles.	Miles.	Miles.	Miles.
Metropolitan...	...	...	...	1,172	353	216	244	1,985
Country Municipalities	...	...	...	2,553	1,549	1,851	1,824	7,777
Shires	...	...	...	12,631	9,247	22,076	35,135	79,089
Western Division	...	...	...	91	145	3,160	2,549	5,945
Total	...	...	...	16,447	11,294	27,303	39,752	94,796

(iii.) *Bridges, Culverts, and Ferries.* The more important bridges have been proclaimed under the provisions of the Local Government Act as "National works" (see above), and these, together with the bridges, etc., in the Western Division, remain under the control of, and are maintained by, the Public Works Department. Particulars of bridges, culverts, and ferries in the State in 1912-13 are given in the following table:—

NEW SOUTH WALES.—BRIDGES, CULVERTS, AND FERRIES, 1912-13.

Particulars.	Bridges.		Culverts.		Ferries.
	No.	Length.	No.	Length.	No.
		ft.		ft.	
National works	273	*	...	...	14
Metropolitan... ..	127	5,486	748	46,173	...
Country municipalities ...	647	37,704	3,335	89,943	13
Shires	3,435	202,704	32,394	285,989	99
Western Division (unincorporated)	117	20,576	88	845	3
Total	4,599	*	36,565	422,950	129

* Not available.

(iv.) *Expenditure on Roads and Bridges.* Since the year 1857 the total expenditure by the Roads Department and Roads Trust on roads and bridges is £24,980,691. In this expenditure is included the cost of administering the Department, services for other Departments, and payments on account of punt approaches and similar works incidental to the road traffic of the country. The amount expended from 1857 to the 30th June, 1900, for the next decennium, and for each succeeding financial year up to 1913, is given below. Until recent years, the expenditure on these works increased at a much faster rate than the population.

NEW SOUTH WALES.—EXPENDITURE BY ROAD DEPARTMENTS AND ROAD TRUSTS, 1857 to 1913.

Period.	Expenditure by Roads Department.	Expenditure by Trustees.	Total.
	£	£	£
1857 to 30th June, 1900 ...	18,714,078	1,258,027	19,972,105
1900-09	4,605,766	30,664	4,636,430
1910-11	125,326	...	125,326
1911-12	126,111	...	126,111
1912-13	120,719	...	120,719
Total	23,692,000	1,288,691	24,980,691

The expenditure by the Department is now limited to the construction of roads in closer settlement areas and to the construction and maintenance of national bridges and ferries, and of works in the unincorporated areas of the Western Division.

4. *Victoria.*—Under the Local Government Act 1903, the control, construction, and maintenance of all roads, streets, and bridges are in the hands of Municipal Councils, who are empowered to open new roads, and to close, divert, or increase the width of any existing street or road, provided that no new road less than one chain in width may be opened without the consent of the Minister. The councils are also authorised to make and repair streets, lanes, or passages on private property, or

to form means of back access to private property, and may compel the owners of such property to pay the cost of so doing. Footways in front of houses or grounds may be kerbed, flagged, paved, or asphalted, and the owners of such houses or grounds must bear half the cost of so doing. The revenue of the councils is derived from rates which may be either ordinary or special. The councils are empowered to raise loans for the purpose of making or opening new streets and roads, and for diverting, altering, or increasing the width of streets and roads, provided that the amount of such loan must not exceed ten times the average income of the council during the three years immediately preceding.

(i.) *Country Roads Board.* With the object of improving the main roads of the State an Act (No. 2415) was passed on 23rd December, 1912, which empowers the Governor-in-Council to appoint a board, to consist of three members.

The duties of the board are to ascertain by survey and investigation what roads are main roads; the nature and extent of the resources of Victoria in metals, minerals, and materials suitable for the purposes of road-making and maintenance, and the most effective and economical methods for dealing with the same, and for supplying and utilizing the material in any part of Victoria; the most effective methods of road construction and maintenance; what deviations (if any) in existing roads or what new roads should be made so as to facilitate communication and improve the conditions of traffic; and to record, publish, and make available for general information the results of all such surveys and investigations. The duty of furnishing information that may be required is imposed on the municipal authorities.

The construction of permanent works and the maintenance of main roads are likewise to be carried out by the municipalities to the satisfaction of the board. The total cost of the works, in the first instance, is to be paid by the Treasury, but subsequently half the amount expended on permanent works and maintenance is to be refunded by the municipalities affected.

For the purpose of making permanent works, power is given to the Governor-in-Council to issue stock or debentures to the amount of £400,000 a year for five years, and the principal and interest are a charge upon the Consolidated Revenue of the State. The money so raised is to be placed to the credit of an account to be called "the Country Roads Board Loan Account," which will be debited with all payments made by the Treasurer towards the cost of permanent works. A sinking fund of 1 per cent. per annum on half the amount borrowed is authorised to be paid out of the Consolidated Revenue until half the amount borrowed is redeemed. An annual payment to the Treasurer of 6 per cent. on the amount due by each municipality in respect of permanent works is provided for, and the cost of maintenance, allocated to each municipality, must be paid before the 1st July in each year. A special rate not to exceed 6d. in the £1 on the net annual value of rateable property to meet the cost of permanent works and maintenance may be levied in any ward or riding of a municipality as the council may direct. In the event of default of payment by a municipality, the board may levy a rate to meet the amount owing. All fees and fines paid under the Motor Car Act, all moneys standing to the credit of the Municipal Fees and Fines Trust Fund, all fees paid on the registration or renewal of the registration of traction engines, and all fees received by the Crown after the 30th June, 1912, under the Unused Roads and Water Frontages Act 1903, are to be credited to the Country Roads Board Fund.

As soon as practicable after the termination of each year the board must present a report to the Minister setting forth its proceedings, the permanent works constructed, the mileage of the roads maintained, and an account of all moneys received and expended under the provisions of the Act.

(ii.) *General and Local Government Expenditure.* The gross amount expended directly by the State Government of Victoria on roads and bridges was £7,958,212 up to the end of June, 1902. The annual expenditure from ordinary revenue by municipalities is not

returned separately, but is included in Public Works Construction and Maintenance (see Section xxvi., *Local Government*). The subjoined table shews the cost from general revenue of municipalities of private streets, roads, etc., and also shews the amounts of municipal loan expenditure in 1901 and from 1908 to 1912:—

VICTORIA.—EXPENDITURE ON ROADS AND BRIDGES, 1901 and 1908 to 1912.

Financial Year. ¹	Annual Expenditure by State Government.	Municipal Loan Expenditure.		Formation of Private Roads, Streets, Lanes, etc. ²	
		Cities, Towns, and Boroughs.	Shires.	Cities, Towns, and Boroughs.	Shires.
	£	£	£	£	£
1901	72,890	16,844	12,928	18,829	4,521
1908	72,246	21,859	5,206	30,907	1,811
1909	99,572	21,389	9,058	34,285	3,603
1910	102,309	25,311	18,077	29,304	2,859
1911	67,001	41,247	24,978	41,167	5,682
1912	58,917	28,237	31,940	59,845	6,890

1. The financial years of Melbourne and Geelong end on the 31st December and the 31st August respectively; those of all other municipalities on the 30th September.

2. Including the cost of flagging, asphaltting footpaths, etc., but exclusive of loan expenditure.

5. Queensland.—In Queensland the construction and maintenance of public roads are controlled under a system of local self-government, for the purposes of which the whole State is divided into (a) towns and (b) shires. The duties, rights, and responsibilities of the local authorities with regard to roads, streets, and bridges are regulated by the Local Authorities Act of 1902. The councils are invested with full powers to open, close, divert, or widen streets, roads, and bridges, and to make by-laws for the regulation of traffic, etc. The members of the councils are elected by the ratepayers, and with the aid of executive officers they undertake the supervision and control of all necessary constructions and improvements of roads and bridges within their district. The rates which the councils are empowered to levy are supplemented by Government grants. Separate returns as to the expenditure by towns and shires on roads and bridges are not available, the amounts being included in the returns of expenditure on public works, particulars as to which expenditure may be found in the Section of this book on *Local Government*.

6. South Australia.—Under the provisions of the District Councils Acts, 1887 to 1904, and the Municipal Corporations Acts, 1890 to 1903, and of the Roads Acts, 1884 to 1908, the councils are invested with full powers as to the opening and making of new streets and roads, and the diverting, altering, or increasing the width of existing roads; as to raising, lowering, or altering the ground or soil of any street or road; and as to the construction, purchase, and management of bridges, culverts, ferries, and jetties.

(i.) *Main Roads and District Roads.* All the roads in each district are classified either as main roads or as district roads. Both classes of roads are under the direct control either of Municipal Corporations or of District Councils, but in the case of main roads the expenditure on construction and maintenance is chiefly provided for by Government grants, which are paid into a main road fund, while the expenditure on district roads is paid for out of general rates, and out of subsidies on the amount of such rates, granted by the central Government. Under the Main Roads Act 1908, a number of roads were declared to be main roads.

The total estimated length of streets and roads in South Australia up to the 30th June, 1912, was as follows:—

SOUTH AUSTRALIA.—ESTIMATED LENGTH OF ROADS AND STREETS, 1912.

Particulars.				Woodblocked.	Macadamised.	Other.	Total.
Miles	...	...	...	$\frac{1}{2}$	8,358	25,997	34,355 $\frac{1}{2}$

(ii.) *Expenditure by Corporations on Main and District Roads.* The following table shows the expenditure by municipal corporations on both main and district roads during 1901-2, and each year from 1908 to 1912 inclusive:—

SOUTH AUSTRALIA.—EXPENDITURE BY CORPORATION ON STREETS, ROADS, AND BRIDGES, 1901-2 and 1908-12.

Year. ¹	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Con-struction.	Main-tenance.	From Main Road Grants.	Total.	Con-struction.	Main-tenance.
	£	£	£	£	£	£	£
1901 ...	148,872	4,906	50,628	7,403	8,738	159	7,745
1908 ...	169,058	3,968	43,538	7,178	7,917	130	8,054
1909 ...	182,145	9,218	63,474	9,679	12,312	258	11,849
1910 ...	186,979	4,031	70,660	14,392	16,000	1,178	13,999
1911 ...	212,506	5,673	63,897	12,935	14,294	1,053	13,634
1912 ...	226,068	10,907	59,609	11,477	11,865	322	12,590

1. Up to and including the year 1903 the financial year ended on the 31st December, but after that date ends on the 30th November.

(iii.) *Expenditure of District Councils on Main and District Roads.* The following table gives similar information with respect to main and district roads under the control of District Councils:—

SOUTH AUSTRALIA.—EXPENDITURE BY DISTRICT COUNCILS ON STREETS, ROADS, AND BRIDGES, 1901 and 1908-12.

Year Ended 30th June.	District Roads.			Main Roads Fund.			
	Total Receipts.	Expenditure.		Receipts.		Expenditure.	
		Con-struction.	Main-tenance.	From Main Road Grants.	Total.	Con-struction.	Main-tenance.
	£	£	£	£	£	£	£
1901 ...	147,309	18,026	47,379	72,980	100,077	11,861	67,487
1908 ...	134,169	35,161	48,289	80,834	80,875	6,277	70,343
1909 ...	140,552	35,922	60,328	79,194	79,554	10,610	69,387
1910 ...	152,091	33,853	64,079	106,096	106,221	10,752	76,150
1911 ...	164,175	44,289	63,811	110,397	111,182	24,660	82,115
1912 ...	179,249	54,342	68,108	119,331	123,154	20,414	102,759

7. **Western Australia.**—In Western Australia the construction, maintenance, and management of roads and bridges throughout the State, except those within the boundaries of municipalities, are under the control of District Road Boards, constituted by the Roads Act, 1911.

(i.) *District Roads and Bridges.* Under the provisions of this Act any part of the State, not within a municipality, may be constituted by the Governor-in-Council into a Road District, under the control of a board of not less than five, nor more than eleven members elected by the ratepayers. The board is invested with full powers for controlling and managing all roads and bridges

within the district, and is empowered to make by-laws for the general regulation of traffic, to control the weight of engines and machines permitted to cross any bridge or culvert, to regulate the speed limits of vehicles, lights to be carried by vehicles, the lighting of streets and roads, and the licensing of bicycles and motor cars. A District Road Board may not, however, construct any road or street less than sixty-six feet wide, nor any bridge or culvert at a greater cost than £100, without the consent of the Minister. The construction of the more important bridges and culverts is generally carried out by the Government, the work, after completion, being handed over to the Road Board for maintenance. In case of land being required for the purpose of constructing a new street or road, or for widening an existing street or road, the provisions of the Public Works Act of 1902 are incorporated in the Roads Act. A board may levy general rates within its district not exceeding two shillings and sixpence nor less than ninepence in the £ on the annual ratable value, and, if valued on the basis of unimproved values of lands, the general rate must not be over threepence nor under one penny in the £ on the capital unimproved value. Boards are also empowered to raise loans for works or undertakings or to liquidate existing loans, but the amount of such loans must not be greater than seven times the average ordinary revenue of the board. In the case, however, of boards already indebted, borrowing power to the extent of ten times the said average is given, less the amount of existing loan indebtedness at time of borrowing. For the purpose of paying the interest on money borrowed a board may levy a special rate. District Road Boards may also exercise the powers of Drainage Boards under the provisions of the Land Drainage Act of 1900.

(ii.) *Municipal Streets, Roads, and Bridges.* As regards roads, streets, and bridges within municipalities, these are under the control of local authorities elected under the provisions of the Municipal Corporations Act 1906. The municipal councils are invested with full powers for making, maintaining, and managing all streets, roads, and bridges within the municipal area, and may request the Governor to declare any such land reserved, used, or by purchase or exchange acquired for a street or way, to be a public highway, and on such request the Governor may, by notice in the *Gazette*, proclaim such highway absolutely dedicated to the public.

(iii.) *Length of Roads, Number of Bridges, and Expenditure on Roads and Bridges.* The following table gives particulars of the operations of the Road District Boards since the 1st January, 1908 :—

WESTERN AUSTRALIA.—PARTICULARS OF ROADS UNDER CONTROL OF DISTRICT ROAD BOARDS, 1908 to 1912.

Year ended the 30th June.	Area.	Revenue.				Expenditure.	Length of Roads.*			No. of Bridges and Culverts.		
		From General Rates.	From Grants and Subsidies.	From other Sources.	Total.		Cleared only.	Formed only.	Metalled or otherwise Constructed.	Total.	Bridges.	Culverts.
	Sq. m.	£	£	£	£	£	Miles.	Miles.	Miles.	Miles.	No.	No.
1908 ...	975,780	40,491	58,311	14,707	113,509	120,088	10,821	4,760	2,337	17,918	509	4,148
1909 ...	975,781	46,034	52,382	15,869	114,285	116,723	13,085 ¹	4,645 ¹	2,797	20,527	554 ²	4,574 ²
1910 ...	975,793	54,115	61,301	14,201	129,617	114,947	14,167	4,622	2,958	21,747	678 ³	4,853 ³
1911 ...	975,800	59,302	100,126	16,474	175,902	141,015	15,169	4,874	3,119	23,162	653	5,211
1912 ...	975,809	70,397	64,774	36,497	171,668	196,576	16,484	4,555	3,432	24,471 ⁴	719 ⁴	5,808 ⁴

* Approximate only.

1. Exclusive of seven Boards which have not supplied the information. 2. Exclusive of three Boards. 3. Exclusive of two Boards. 4. Exclusive of five Boards.

The following table gives similar information with reference to roads controlled by municipalities under the Municipal Institutions Act 1900 and the Municipal Corporations Act 1906:—

**WESTERN AUSTRALIA.—PARTICULARS OF STREETS, ROADS, AND BRIDGES UNDER
THE CONTROL OF MUNICIPALITIES, 1901 and 1908-12.**

Year ended the 31st October.	No. of Municipalit's.	Length of Streets and Roads.*					Revenue.		Expenditure.	
		Paved, M't'll'd or Gr'v'll'd	Form'd only.	Clear'd only.	Not Clear'd	Total.	From Rates.	From Grants.	Works and Impr'v- ments.	Street Light'g and Wat'r'g
		Miles.	Miles.	Miles.	Miles.	Miles.	£	£	£	£
1901	42	195	30	149	137	511	78,021	66,850	111,256	15,969
1908	47	474	90	323	271 ¹	1,158	139,228	67,315	103,943	31,882
1909	46	486	88	322	321	1,217	138,445	37,301	83,283	30,625
1910	42 ²	525	104	309	297	1,235	138,719	13,336	87,998	30,965
1911	42	521	105	292	264	1,202	144,993	27,944	75,697	30,341
1912	38 ³	528	103	278	312	1,221	148,538	25,902	78,576	27,322

* Approximate only.

1. Exclusive of three municipalities, which have not supplied the information. 2. Exclusive of three municipalities. 3. Including also particulars of four municipalities which were dissolved during the year.

8. **Tasmania.**—In 1906 all the existing Road Trusts and Main Road Boards were abolished by the Local Government Act, which provided that the councils of all municipalities constituted under the Act should exercise all powers conferred upon, and should be liable to all the obligations imposed upon Road District Trusts and Main Road Boards by the Roads Act of 1884. The whole State, with the exception of Hobart and Launceston, is divided into municipal districts, each of which is under the control of a warden and councillors, and is deemed to be a road district and a main road district for the purposes of the Roads Act 1884.

(i.) *Mileage of Roads and Number of Bridges.* The following table gives particulars for the year 1912 as to length of roads and number of bridges and culverts under the control of the municipalities:—

TASMANIA.—ROADS AND BRIDGES IN MUNICIPALITIES, 1912.

Roads.			Bridges.	Culverts.
Macadamised or Gravelled.	Other.	Total.		
Miles.	Miles.	Miles.	No.	No.
5,334	4,955	10,289	1,120*	19,702*

* Last available figures.

(ii.) *Revenue and Expenditure.* The following table gives particulars for the year 1912 of the revenue and expenditure of municipal councils in respect of roads and bridges:—

TASMANIA.—ROADS AND BRIDGES, REVENUE AND EXPENDITURE, 1912.

Revenue.				Expenditure.
From Government.	Rates.	All other.*	Total.	
£	£	£	£	£
26,051	51,260	100,874	178,185	179,451

* Including current receipts from loans.
£9,844 from Revenue by State Government.

† Municipal "Works and Services," not including

§ 2. Railways.

(A) General.

1. **Improvements in Railway Statistics.**—In February, 1909, a report was issued by the Commonwealth Statistician to the Minister for Home Affairs on the subject of *The Desirability of Improved Statistics of Government Railways in Australia*. In this report a number of matters were specified in respect to which there was want of uniformity in the form and basis of the statistics published in the annual reports of the Railway Departments of the several States, and the importance and desirability of obtaining more complete and uniform statistics, especially with regard to “passenger-miles” and “ton-miles,” were emphasised. This report was brought forward and considered by the Commissioners and General Managers of the Australian State Railways at their annual conference, held in Melbourne in May, 1909, with the result that resolutions were passed agreeing to publish in the annual reports of State Railway Departments the uniform statistics regarding all the matters referred to by the Commonwealth Statistician, with two exceptions, viz. :—(a) with respect to the classification of tonnage carried and the revenue derived therefrom (see further (B) paragraph 17 hereof), and (b) with respect to “passenger-mileage” and “ton-mileage” (see further (B) paragraph 18 hereof). The resolutions referred to were to take effect from 1st July, 1909.

2. **Railway Communication in the Commonwealth.**—An account of the progress in railway construction in Australia since the opening of the first line in 1855 will be found in previous issues of the Year Book (No. 6, p. 681). In the eastern, south-eastern, and southern parts of Australia there now exists a considerable network of railway lines converging from the various agricultural, pastoral and mining districts towards the principal ports, which are themselves connected by systems of lines roughly running parallel to the coast. These are shewn on the accompanying map. In the east, lines radiating from Townsville, Rockhampton, Brisbane, and Sydney extend inland in various directions for distances ranging up to over 600 miles; in the south-east there are numerous lines, those in Victoria converging towards Melbourne, while others in New South Wales have their terminus in Sydney; in the south there are three main lines, with numerous branches, running from Melbourne, while from Adelaide one main line, with several branches to the coastal towns, runs inland in a northerly direction for a distance of nearly 700 miles, and another line runs in a south-easterly direction to various ports and meeting the main line from Melbourne on the border of South Australia and Victoria. The main interstate line, (indicated by a heavier line in the map) which permits of direct communication between the four capital cities—Brisbane, Sydney, Melbourne, and Adelaide—covers a distance from end to end of 1790½ miles. This journey occupies just over three days, including one stop of 9 hours and 15 minutes at Sydney, and another of 3 hours 39 minutes at Melbourne. The distance between the capitals and the times occupied are as follow :—

Brisbane to Sydney	...	...	725 miles	...	26 hours 55 min.
Sydney to Melbourne	...	...	582½ „	...	16 „ 51 „
Melbourne to Adelaide	...	...	482½ „	...	17 „ 26 „

The longest railway journey which can be undertaken in Australia, on one continuous line of railway, is from Longreach in Queensland to Oodnadatta in South Australia, a total distance of 3303 miles. In Western Australia there is a connected system of main or trunk lines between the ports of the State and the agricultural, pastoral, and mining districts,

In the northern parts of Queensland and in the Northern Territory there are also a number of disconnected lines running inland from the more important ports. In Tasmania the principal towns are connected by a system of lines, and there are also, more especially in the western districts, several lines which have been constructed for the purpose of opening up mining districts.

3. Mileage Open for Traffic.—In all the States of the Commonwealth the principle that the control, construction, and maintenance of the railways should be in the hands of the Government has long been adhered to, excepting in cases presenting unusual circumstances. In various parts of the Commonwealth lines have been constructed and managed by private companies, but at the present time practically the whole of the railway traffic in the Commonwealth is in the hands of the various State Governments. A large proportion of the private lines which are at present running have been laid down for the purpose of opening up forest lands or mining districts, and are not generally used for the conveyance of passengers or the public conveyance of goods. (See D. *Private Railways*, hereinafter.)

(i.) *Mileage of Government and Private Lines, 1855 to 1913.* The subjoined table shews the mileage of both Government and private lines open for traffic (exclusive of sidings and cross-overs) in each State and also in the Commonwealth at suitable periods since the inauguration of railways in Australia in 1855 up to the year 1913. The figures from 1855 to 1881 are given as up to the end of the calendar year; later figures are as up to the end of the financial year ended on the 30th June, unless otherwise stated, excepting the mileages for private lines which are in all cases taken for the calendar year:—

GOVERNMENT AND PRIVATE RAILWAYS.—MILEAGE OPEN, 1855 to 1913.

Year.	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wlth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1855 ...	14	2 $\frac{1}{2}$	*	†6 $\frac{3}{4}$	*	*	*	23 $\frac{1}{4}$
1861 ...	73	114	*	56	*	*	*	243
1871 ...	358	276	218	133	12	45	*	1,042
1881 ...	1,040	1,247	800	845	92	168	*	4,192
1890-1 ...	2,263	2,763	2,205	1,666	†656	†425	145	10,123
1900-1 ...	2,926	3,238	2,904	1,736	1,984	§618	145	13,551
1910-11 ...	4,027	3,574	4,390	1,993	3,208	675	145	18,012
1911-12 ...	4,098	3,673	4,633	1,997	3,430	701	145	18,677
1912-13 ...	4,197	3,698	4,936	2,202	3,827 $\frac{1}{2}$	729	145	19,734 $\frac{1}{2}$

* No railways yet constructed. † To the 31st December. This line between Goolwa and Port Elliot was opened in 1854 as a horse tramway, but now forms part of the railway system. ‡ To the 31st December, 1891. § To the 31st December, 1901.

It will be seen from the above table that the rate of construction up to the year 1871 was very slow, the average annual length of lines opened from 1861 to 1871 being only 80 miles for the whole Commonwealth. By the middle of the following decade, however, the principal mountain ranges had been crossed, and the work of construction could be proceeded with at a greater rate, and at a less cost per mile. The greatest period of activity was from 1881 to 1891, when the average annual length opened for traffic was 593 miles for the whole Commonwealth; the corresponding figures for the following periods from June 1891 to June 1901, and from June 1901 to June 1911, were 343 and 452 miles respectively.

4. Comparative Mileage of State-owned and Private Lines, 1913.—The subjoined table shews for each State and for the Commonwealth (a) the length of lines owned by the respective State Governments, all of which lines are of course open for general use by the

public, (b) the length of private lines available for general use by the public, and (c) the length not so available. The mileages specified in the case of State-owned lines are as up to the 30th June, 1913; those given for private lines are as up to the 31st December, 1912:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARATIVE MILEAGE OF STATE-OWNED LINES, OF PRIVATE LINES AVAILABLE FOR GENERAL TRAFFIC AND OF PRIVATE LINES NOT SO AVAILABLE, 1912-13.

State.	State-owned Lines.	Private Lines available for General Traffic.	Total Open for General Traffic.	Private Lines used for Special Purposes only.	Grand Total.
	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales	3,930	153½	4,083½	113½	4,197
Victoria...	3,647	14	3,661	37	3,698
Queensland ...	4,524	391	4,915	21	4,936
South Australia ...	2,168*	...	2,168	34	2,202
Western Australia	2,854	277	3,131	696½	3,827½
Tasmania ...	507	166	673	56	729
Northern Territory	145	...	145	...	145
Commonwealth	17,775	1,001½	18,775½	958	19,734½

* Including the Port Augusta-Oodnadatta Line (478 miles).

5. Comparative Railway Facilities in Different States, 1913.—The area of territory and the population per mile of line open to the public for general traffic (including both Government and private lines) on the 30th June, 1913, are shewn in the subjoined statement for each State and also for the Commonwealth:—

GOVERNMENT AND PRIVATE RAILWAYS.—COMPARISON OF RAILWAY FACILITIES IN DIFFERENT STATES, 1913.

State.	Population, 30th June, 1913.	Area.	Per Mile of Line Open.	
			Population.	Area.
	Number.	Sq. miles.	Number.	Sq. miles.
New South Wales* ...	1,809,667	310,372	443	76.0
Victoria ...	1,390,381	87,884	379	24.0
Queensland ...	656,224	670,500	133	136.4
South Australia ...	433,685	380,070	200	175.3
Western Australia ...	313,940	975,920	100	311.6
Tasmania ...	194,521	26,215	289	38.9
Northern Territory ...	3,756	523,620	25	3,611.1
Commonwealth ...	4,802,174	2,974,581	255	158.4

* Including Federal Territory.

6. Classification of Lines according to Gauge, 1912-13.—The subjoined tables shew the total mileage, exclusive of sidings and cross-overs, of (i.) Government railways; (ii.) Private railways open to the public for general traffic; and (iii.) Private lines used for special purposes, classified according to gauge. Particulars of Government railways are up to 30th June, 1913, of private railways open for general traffic to the 31st December, 1912, and of private railways open for special purposes to the 31st December, 1911.

GOVERNMENT AND PRIVATE RAILWAYS.—CLASSIFICATION ACCORDING TO GAUGE, 1912-13.

State.	Mileage having a Gauge of—					Total.
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft.	
GOVERNMENT RAILWAYS.						
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
New South Wales ...	...	3,930	...	...	...	3,930
Victoria ...	3,525	...	...	122	...	3,647
Queensland ...	...	...	4,524	...	...	4,524
South Australia ...	723	...	1,445*	...	...	*2,168
Western Australia ...	...	...	2,854	...	...	2,854
Northern Territory...	...	...	145	...	...	145
Total, Mainland...	4,248	3,930	8,968	122	...	17,268
Tasmania ...	...	...	483	...	24	507
Commonwealth ...	4,248	3,930	9,451	122	24	17,775
PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC.						
New South Wales ...	45	72½	36	...	...	153½
Victoria ...	14	...	...	...	...	14
Queensland ...	...	...	284	...	107	391
South Australia ...	...	...	...	...	...	...
Western Australia ...	...	...	277	...	...	277
Tasmania...	...	...	156	...	10	166
Commonwealth ...	59	72½	753	...	117	1,001½
PRIVATE RAILWAYS OPEN FOR SPECIAL PURPOSES.						
New South Wales ...	...	110	3½	...	...	113½
Victoria ...	37	...	...	...	...	37
Queensland ...	...	...	17	...	4	21
South Australia ...	...	...	34	...	...	34
Western Australia ...	...	...	625	...	71½†	696½
Tasmania ...	...	...	42	...	14	56
Commonwealth ...	37	110	721½	...	89½	958
TOTAL.						
New South Wales ...	45	4,112½	39½	...	...	4,197
Victoria ...	3,576	...	...	122	...	3,698
Queensland ...	...	...	4,825	...	111	4,936
South Australia ...	723	...	1,479*	...	...	*2,202
Western Australia ...	...	...	3,756	...	71½	3,827½
Tasmania ...	...	...	681	...	48	729
Northern Territory...	...	...	145	...	...	145
Commonwealth ...	4,344	4,112½	10,925½	122	230½	19,734½

* Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911. † Including 26 miles of 1 ft. 8 in. gauge.

B) Government Railways.

1. **Mileage Open, 1901 to 1913.**—The following table shews the length of Government railways open for traffic on the 30th June in the years 1901-2 and 1908-13 :—

GOVERNMENT RAILWAYS.—MILEAGE OPEN FOR TRAFFIC FOR 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1901-2 ...	3,026	3,302	2,801	1,736	1,360	*462	145	12,832
1907-8 ...	3,472	3,396	3,359	1,879	1,943	463	145	14,657
1908-9 ...	3,623	3,410	3,498	1,888	2,044	463	145	15,071
1909-10 ...	3,643	3,490	3,660	1,912	2,144	469	145	15,463
1910-11 ...	3,760	3,523	3,867	†1,935	2,375	470	145	16,075
1911-12 ...	3,832	3,622	4,266	†1,939	2,598	496	145	16,898
1912-13 ...	3,930	3,647	4,524	†2,168	2,854	507	145	17,775

* To the 31st December. † Including the mileage (478) of the Port Augusta to Oodnadatta line leased to the South Australian Government by the Commonwealth Government on 1st January, 1911.

The following statement shews the actual mileage opened for traffic in the year 1912-13, and also the annual average increase in mileage opened since 1903 in each State:—

GOVERNMENT RAILWAYS.—MILEAGE OPENED ANNUALLY.

State	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	C'wth
Mileage opened during 1912-13	98	25	258	229	256	11	...	877
Average annual mileage increase (1904 to 1913) ...	79	26½	181	43	134	4½	...	468

NOTE.—Owing apparently to remeasurements of lines in New South Wales and Western Australia, the mileages given in this table do not agree with those open for traffic given in the previous table.

(i.) *New South Wales.* During the year ended 30th June, 1913, the following lines were opened for traffic:—Rookwood to Regent's Park (2 miles); Urana to Oaklands (16½ miles); and Dungog to Taree (83 miles).

(ii.) *Victoria.* The following lines were opened for traffic during 1912-13:—Noradjuha to Toolando (11½ miles); and Jeparit to Loxton (13½ miles), a total of 25 miles.

(iii.) *Queensland.* The increase of 258 miles in the mileage opened for traffic in 1912-13 was due to the opening of the following lines:—Cordalba to Dallarnie (31 miles); Bundaberg to Woongarra Junction (1 mile); Mt. Morgan to Wowan (29 miles); Blackall to Malverton (23 miles); Benarkin to Yarraman Creek (15 miles); Allora to Goomburra (9 miles); Thallon to Dirranbandi (39 miles); 17-Mile to Cooyar (21 miles); Westgate to Yarronvale (49 miles); Malbon to Duchess (36 miles); and Babinda to Mooliba (5 miles).

(iv.) *South Australia.* The lines opened for traffic in this State during the year 1912-13 were those from Tailem Bend to Brown's Wells ($96\frac{1}{2}$ miles), Yeelanna to Minnipa Hill ($106\frac{1}{2}$ miles), and Cummins to Ungarra (25 miles).

By the transfer to the Commonwealth Government of the line from Port Augusta to Oodnadatta, the railways of the State have undergone a reduction to the extent of 478 miles. This line has, however, been leased to the State by the Commonwealth Government as from the 1st January, 1911, and is therefore included in the mileage belonging to this State.

(v.) *Western Australia.* The following new sections of railway were taken over from the Public Works Department during the year 1912-13 and opened for public traffic:—Port Hedland-Marble Bar ($114\frac{1}{2}$ miles), Tambellup to Ngowangerup ($23\frac{1}{2}$ miles), Upper Darling Range extension ($1\frac{1}{4}$ miles), Northampton to Ajana (33 miles), Ngowangerup to Ongerup ($34\frac{3}{4}$ miles), and Quairading to Bruce Rock ($48\frac{3}{4}$ miles), a total of $255\frac{3}{4}$ miles.

(vi.) *Tasmania.* During the year 1912-13 an extension from Burnie as far as Wynyard (11 miles) was opened for traffic.

2. **Non-conformity of Gauge.**—With but few exceptions, all the railway lines in the Commonwealth open for general traffic are now owned and managed by the respective States in whose territory they run, but, unfortunately for the purpose of interstate traffic, the construction of the various systems in different parts of Australia has proceeded without uniformity of gauge. In 1846 Mr. Gladstone, then Colonial Secretary, recommended in a despatch to the Governor of New South Wales that the 4 ft. 8½ in. gauge should be adopted. In 1850, however, the engineer to the Sydney Railroad and Tramway Company strongly advocated the adoption of the 5 ft. 3 in. gauge, and in 1852 an Act was passed making it compulsory that all railways in New South Wales should be constructed to the wider gauge, the Governors of Victoria and South Australia being duly advised of the step that had been taken. In 1852, however, the company mentioned, having changed its engineer, also changed its views as to the gauge question, and in the following year succeeded in obtaining the repeal of the Act of 1852 and in passing another, under the provisions of which the narrower gauge was made imperative. This step was taken without the concurrence of the other States concerned, and a considerable amount of ill-feeling arose, especially in Victoria, where two private companies had already placed large orders for rolling stock constructed to the broad gauge originally chosen. The result was that it was decided in Victoria to adhere to the 5 ft. 3 in. gauge as the standard gauge for that State, while the Sydney Railroad and Tramway Company proceeded with the construction of its lines to the 4 ft. 8½ in. gauge, and these two gauges have since been adhered to as the standard gauges of the respective States. The Queensland Government had at the outset adopted a gauge of 3 ft. 6 in. as being best suited to the requirements of the colony, and has since adhered to that gauge throughout the State, so that all goods have to be discharged and reloaded at the boundary between that State and New South Wales. In South Australia the broad gauge of Victoria was at first adopted, and the part of the interstate line between Adelaide and the Victorian boundary was constructed to that gauge, so that the line from Melbourne to Adelaide is uniform. In the lines which have been constructed more recently, however, and in the Northern Territory, the South Australian Government has, with a view to economy in construction, adopted a gauge of 3 ft. 6 in. In Western Australia and Tasmania the 3 ft. 6 in. gauge was also adopted. It was recognised in both these States that the construction of railways was essential to their proper development, but as their financial

resources would not bear a heavy initial expenditure in connection with the establishment of railway lines, it was decided to adopt the narrow gauge. In Victoria, light railways have been constructed in recent years to a gauge of 2 ft. 6 in., whilst in Tasmania short lengths have been laid down to a 2 ft. gauge.

3. Interstate Communication.—Until the railway systems of the eastern States were connected at the common boundaries the inconvenience of non-conformity of gauge was not felt. Since then, however, the necessary transshipments of both passengers and goods have been a source of trouble, delay, and expense. On the 14th June, 1883, a railway bridge over the River Murray at Wodonga was opened for traffic, and communication was then established between Melbourne and Sydney. On the 19th January, 1887, the last section of the Victorian line to Serviceton, on the South Australian border, was completed, and a junction was thus effected with the South Australian line to Adelaide. On the 16th January, 1888, a junction was effected between the New South Wales and Queensland lines at Wallangarra, but there was still a break in the line from Sydney at the Hawkesbury River, thirty-six miles from Sydney. This last link was, however, completed on the 1st May, 1889, by the opening of the Hawkesbury River bridge, 2900 feet in length, and railway communication was thus established between the four capital cities, Brisbane, Sydney, Melbourne, and Adelaide.

The effect of the transcontinental railway now under construction will be that Western Australia will also be linked to the other States and an unbroken line of communication established from one end of the continent to the other. The construction, moreover, of lines, recently decided upon, connecting Victoria with the Riverina district in New South Wales and with the wheat growing districts of South Australia, will undoubtedly facilitate interstate exchange and will allow the produce of inland areas to find its natural outlet.

4. Unification of Gauge.—The development of the railway systems of the Commonwealth has shewn that the adoption of different gauges on the main lines in the several States was a serious error. The extra cost, delay, and inconvenience incurred by the necessity of transferring through-passengers and goods at places where there are breaks of gauge, though not at present of any appreciable magnitude, are becoming more serious as the volume of business increases. As an indication of the extra cost thus involved the junction charges on interstate traffic between New South Wales and Victoria range from 1s. 6d. to 2s. 6d. per ton.

Although the cost of alteration to a uniform gauge would be great, many propositions have from time to time been put forward with the object of securing such a gauge, and attention has been drawn to the importance of the unification of gauges before further expenditure on railway construction is incurred by the States. The problem is, however, one which is by no means easy of solution, and the difficulties are increased by the introduction of what may be called questions of local or State policy.

The first question that naturally arises in considering the problem is as to which gauge should be adopted as the universal gauge of the Commonwealth. As regards Government railways only, the New South Wales gauge has a mileage of 3930; Victoria and South Australia have a combined mileage of 4248 of 5 ft. 3 in. gauge; while Queensland, South Australia, Western Australia, and the Northern Territory have together 8968 miles of 3 ft. 6 in. gauge. By far the greater part of the mileage of private railways open for general traffic has also been constructed to the 3 ft. 6 in. gauge.

The mere question of preponderance of mileage, therefore, indicates the 3 ft. 6 in. gauge for adoption. But this question is obviously subordinate to those involving engineering and economic considerations. Thus, the relative efficiency from the widest point of view, the relative costs of alterations of permanent way and rolling stock, of carrying capacity and speed, that is to say, questions of a technical nature about which figures are not available, enter into the grounds for decision. As regards the unification of the New South Wales and Victorian lines, the advantage of reducing the broad gauge to the 4 ft. 8½ in. gauge is that there would be no necessity for the alteration of tunnels, cuttings, bridges, or viaducts.

In 1897 a conference was held between the Railway Commissioners of New South Wales, Victoria, and South Australia to consider and report upon the unification of the railway gauges of these States. In their report the Commissioners estimated the cost of converting all the lines in the three States to a 5 ft. 3 in. gauge at £4,260,000, and to one of 4 ft. 8½ in. at £2,360,500. In 1903 the question was again brought up, more particularly with regard to the proposed transcontinental line, and the Engineers-in-Chief reported in favour of a gauge of 4 ft. 8½ in. At the Premiers' Conference, held in January 1912, the subject was again under consideration, but no decision was come to.

In November 1912, another conference of railway engineers representing the six States and the Federal Government was held, and the question of unification of gauge was again discussed. The necessity for such a step was emphasised, and a conclusion was come to that the relative advantages of the 5 ft. 3 in. and 4 ft. 8½ in. gauges, from the point of view of efficiency and economy of working, were approximately equal, and that the determination of the most suitable gauge should be made on the basis of cost. Owing, however, to the fact that track mileage, ton mileage, and wages, had increased 90 per cent., 200 per cent., and 50 per cent., respectively, since 1897, together with a correspondingly large increase in the cost of material, the Conference estimated the cost of converting all lines to a 5 ft. 3 in. gauge at £51,659,000 and to a 4 ft. 8½ in. gauge at £37,164,000. It recommended that the latter gauge should be adopted, and pointed out that the longer the work of conversion was delayed, the greater the cost would become. An alternative scheme by which the main trunk lines and more important branches should be converted was also proposed, as possibly meeting immediate requirements and being, from a Federal point of view, perhaps a more attractive proposition, than any other which could be suggested at the present time. The estimated cost of this limited scheme was £12,142,000. The subject was again under discussion at the Premiers' Conference, held in Melbourne, in April 1914, when it was decided to refer the matter to the Interstate Commission, that the latter body might furnish a report as to the benefits of unification, its cost, and the apportionment of such cost.

In February, 1911, a conference of officers of the Commonwealth and State Governments was held in Melbourne under the presidency of the Minister for Defence to consider matters of defence as affected by the facilities for transport of troops and armaments in the event of war. The proposal laid before the conference was that a railway central staff should be formed, so that in case of war the Defence Department would have at hand not only a well considered scheme of mobilisation, but also an organised staff of men ready to carry out the work of transport.

5. Average Mileage Worked, Train Miles Run, Number of Passenger Journeys, and Tonnage of Goods and Live Stock Carried, on Government Railways.—The table at head of page 602 gives the actual mileage open for traffic at the end of each financial year, but, in considering the returns relating to revenue and expenditure, and other matters, it is desirable to know the average number of miles actually worked during each year. The next table shews the average number of miles worked, the total number of train miles run, the number of passenger journeys, and the tonnage of goods and live stock carried by the Government railways of each State during the years 1901-2 and 1908-13 inclusive :—

GOVERNMENT RAILWAYS.—AVERAGE MILEAGE WORKED, TRAIN MILES RUN, NUMBER OF PASSENGER JOURNEYS, AND TONNAGE OF GOODS AND LIVE STOCK CARRIED, 1901 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tasmania.	N. Ter.	C'wealth.
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AVERAGE MILEAGE WORKED.

1901-2	2,953	3,265	2,801	1,736	1,356	468*	145	12,724
1908-9	3,560	3,397	3,444	1,881	1,971	470	145	14,868
1909-10	3,625	3,441	3,533	1,893	2,102	474	145	15,213
1910-11	3,713	3,505	3,795	1,915	2,286	478	145	15,837
1911-12	3,799	3,543	4,144	1,938	2,471	503	145	16,543
1912-13	3,872	3,639	4,351	2,012	2,783	508	145	17,310

TRAIN MILES RUN (,000 OMITTED).

1901-2	11,649	11,285	5,666	4,196	4,508	903*	30	38,237
1908-9	15,074	11,291	7,391	4,925	4,102	1,029	31	43,843
1909-10	15,468	11,706	8,157	5,421	4,398	1,060	30	46,240
1910-11	17,007	12,973	9,367	5,946	4,963	1,041	30	51,327
1911-12	18,521	13,836	10,327	6,244	5,237	1,047	30	55,232
1912-13	19,184	14,235	11,464	6,625	5,623	1,007	31	58,169

NUMBER OF PASSENGER JOURNEYS (,000 OMITTED).

1901-2	30,885	57,465	18,421	9,643	8,158	762*	4	115,338
1908-9	52,052	81,021	11,522	13,853	12,717	1,547	3	172,715
1909-10	53,644	85,280	13,259	15,282	13,171	1,351	3	182,290
1910-11	60,920	93,796	14,791	16,620§	14,828	1,682	2	202,639
1911-12	70,707	104,235	17,081	18,353‡	16,300	1,715	2	228,463
1912-13	79,490	111,514	19,999	19,382‡	17,920	1,649	1	249,855

TONNAGE OF GOODS AND LIVE STOCK CARRIED (,000 OMITTED).

1901-2	6,468	3,434	1,882	1,392	1,888	407*	2	15,473
1908-9	9,299	4,167	2,662	2,166	1,997	483	3	20,777
1909-10	8,393	4,468	2,831	2,481	2,242	439	2	20,356
1910-11	10,355	4,968	3,295	2,731§	2,489	364	2	24,204
1911-12	10,910	5,298	3,494	2,782‡	2,542	470	2	25,498
1912-13	11,666	5,150	3,798	3,016‡	2,866	465	3	26,964

* For the calendar year 1902. The average mileage worked is larger than the actual mileage open, owing to the fact that the Government Railways have running powers over certain private lines. † Exclusive of Port Augusta-Oodnadatta line. ‡ These figures are partly estimated the actual returns excluding journeys by season ticket holders. § Exclusive of Port Augusta-Oodnadatta line for six months ended 30th June, 1911. ¶ Exclusive of live stock. * Exclusive of live stock returns for Tasmania.

6. Length and Gauge of Railway Systems in each State.—A map shewing the State railway lines, and also some private lines open to the public for general traffic, in the different States of the Commonwealth is given on page 621 hereafter. In all the States the Government railways are grouped, for the convenience of administration and management, into several divisions or systems, some of which have already been briefly referred to above in dealing with the history of construction of the railways. The subjoined summary shews concisely the gauge and length of the main and branch lines included in each division or system of the different States of the Commonwealth for the year ended the 30th June, 1913:—

GOVERNMENT RAILWAYS, 1912-13.

Particulars.				Length.	Gauge.
				Miles.	ft. in.
1. NEW SOUTH WALES.					
(i.) The Northern line and branches—					
(a) Main line. Strathfield-Wallangarra ...				486 $\frac{1}{4}$	4 8 $\frac{1}{2}$
(b) Branch lines ...				475	4 8 $\frac{1}{2}$
(ii.) The North Coast line and branches—					
(a) Main line. West Maitland-Murwillumbah ...				266 $\frac{1}{2}$	4 8 $\frac{1}{2}$
(b) Branch lines ...				18	4 8 $\frac{1}{2}$
(iii.) The Western line and branches—					
(a) Main line. Granville-Bourke ...				495	4 8 $\frac{1}{2}$
(b) Branch lines ...				781	4 8 $\frac{1}{2}$
(iv.) The Southern line—					
(a) Main line. Granville-Wodonga ...				381	4 8 $\frac{1}{2}$
(b) Branch lines ...				840 $\frac{1}{2}$	4 8 $\frac{1}{2}$
(v.) The South-coast (Illawarra) line—					
(a) Main line. Sydney to Nowra... ..				93	4 8 $\frac{1}{2}$
(b) Branch lines				7	4 8 $\frac{1}{2}$
(vi.) Suburban lines				47	4 8 $\frac{1}{2}$
(vii.) Broken Hill line. Broken Hill-Tarrawingee ...				40	3 6
Total				3,930	...

2. VICTORIA.

(i.) The South-eastern system—					
(a) Main lines. Dandenong-Port Albert, Aspendale-Stony Point				145	5 3
(b) Branch lines				43 $\frac{1}{2}$	5 3
(ii.) The Eastern system—					
(a) Main lines. Dandenong-Bairnsdale, Bayswater-Gembrook, Croydon-Healesville				18	2 6
(b) Branch lines				202	5 3
(iii.) The North-eastern system—					
(a) Main line. Craigieburn-Wodonga				97	5 3
(b) Branch lines				29	2 6
(iv.) The Northern system—					
(a) Main line. Digger's Rest-Echuca				171	5 3
(b) Branch lines				30	2 6
(v.) The North-western system—					
(a) Main line. Rockbank-Serviceton				446 $\frac{1}{2}$	5 3
(b) Branch lines				135	5 3
(vi.) The Western and South-western system—					
(a) Main line. Werribee-Portland				1,021	5 3
(b) Branch lines				266	5 3
(vii.) The Suburban system—					
(a) Main line. Digger's Rest-Echuca				259 $\frac{1}{2}$	5 3
(b) Branch lines				272	5 3
(viii.) The Western and South-western system—					
(a) Main line. Werribee-Portland				44 $\frac{1}{2}$	2 6
(b) Branch lines				273 $\frac{1}{2}$	5 3
(viii.) The Suburban system—					
Including the lines to Aspendale, Dandenong, Bayswater, Croydon, Hurst's Bridge, Craigieburn, Digger's Rest, Rockbank, and Werribee				194 $\frac{1}{2}$	5 3
Total				3,647 $\frac{1}{2}$	...

Particulars.				Length.	Gauge.
				Miles.	ft. in.
3. QUEENSLAND.					
(i.) The Southern division—					
(a)	The Southern line.	Ipswich-Wallangarra	...	221	3 6
(b)	The Western line.	Gowrie Junction-Cunnamulla	...	545	3 6
(c)	The South-western line.	Warwick-Talwood	...	256	3 6
(d)	The Nth.-coast line.	Northgate Junction-235 mls. 14 chs.	...	234	3 6
(e)	The South-coast line.	Sunnybank-Tweed Heads	...	62	3 6
(f)	Suburban lines	...	...	73	3 6
(g)	Branch lines	...	...	788	3 6
(ii.) The Central division—					
(a)	The Coast line.	235 miles 14 chains-Rockhampton	...	161	3 6
(b)	The Central line.	Archer Park-Longreach	...	429	3 6
(c)	Branch lines	...	...	385	3 6
(iii.) The Northern division—					
(a)	Mackay line	...	...	63	3 6
(b)	Bowen line	...	...	48	3 6
(c)	The Great Nthn. Rlwy.	Townsville-Selwyn branches	...	790	3 6
(d)	Cairns line	...	...	305	3 6
(e)	Cooktown line	...	...	68	3 6
(f)	Normanton line	...	...	96	3 6
Total				4,524	...
4. SOUTH AUSTRALIA.					
(i.) The Midland system—					
(a)	Main line.	Adelaide-Terowie	...	140	5 3
(b)	Branch lines	...	...	128	5 3
(ii.) The Northern system—					
(a)	Terowie-Quorn	...	...	94½	3 6
(b)	Other lines	...	...	455	3 6
				5	5 3
(iii.) The Southern system—					
(a)	Main line.	Adelaide to Serviceton	...	194½	5 3
(b)	Branch lines	...	...	158½	5 3
(iv.) The South-eastern system—					
(a)	Wolsley-Mount Gambier	...	...	112	3 6
(b)	Branch lines	...	...	113	3 6
(v.)	Port Broughton line	...	...	10	3 6
(vi.) The Western system—					
	Port Lincoln-Ungarra	...	...	182½	3 6
(vii.)	Murray lands lines.	Tailem Bend to Meribah	...	96½	5 3
Total				1,689½	...
5. WESTERN AUSTRALIA.					
(i.) Eastern railway—					
(a)	Main line.	Fremantle-Beverley	...	111	3 6
(b)	Branch lines	...	...	177	3 6
(ii.) Eastern Goldfields railway—					
(a)	Main line.	Northam-Laverton	...	520	3 6
(b)	Branch lines	...	...	346½	3 6
(iii.) South-western railway—					
(a)	Main line.	Perth-Bunbury	...	115	3 6
(b)	Branch lines	...	...	368½	3 6
(iv.) Great Southern railway—					
(a)	Beverley-Albany Jetty	...	...	243	3 6
(b)	Branch lines	...	...	282	3 6
(v.) Northern railway—					
(a)	Main line.	Geraldton-Meekatharra	...	333½	3 6
(b)	Branch lines	...	...	208½	3 6
(vi.)	Hopetoun-Ravensthorpe railway	...	...	34	3 6
(vii.)	Port Hedland-Marble Bar	...	...	114½	3 6
Total				2,853½	...

Particulars.				Length.	Gauge.
6 TASMANIA.				Miles.	ft. in.
(i.)	Main line.	Hobart-Evandale Junction	...	124 $\frac{1}{2}$	3 6
(ii.)	Derwent Valley line.	Bridgewater-Glenora	...	30 $\frac{1}{2}$	3 6
(iii.)	Apsley line.	Brighton Junction-Apsley	...	26	3 6
(iv.)	Parattah-Oatlands line	...	...	4 $\frac{1}{2}$	3 6
(v.)	Fingal line.	St. Mary's-Conara	...	46 $\frac{1}{2}$	3 6
(vi.)	Western line.	Launceston-Burnie	...	122 $\frac{1}{2}$	3 6
(vii.)	Chudleigh line	...	...	12 $\frac{1}{2}$	3 6
(viii.)	North-eastern line.	Launceston-Scottsdale	...	71 $\frac{1}{2}$	3 6
(ix.)	Sorell-Bellerive line	...	...	14 $\frac{1}{2}$	3 6
(x.)	Zeehan line.	Regatta Point-Zeehan	...	29 $\frac{1}{2}$	3 6
(xi.)	North-east Dundas tramway.	Zeehan-Williamsford	...	20 $\frac{1}{2}$	2 0
(xii.)	Comstock tramway	...	...	4 $\frac{1}{2}$	2 0
Total				506 $\frac{3}{4}$	...
7. FEDERAL RAILWAYS.					
(i.)	Northern Territory—				
	Darwin to Pine Creek	...	...	145 $\frac{1}{2}$	3 6
(ii.)	South Australia—				
	Port Augusta to Oodnadatta	...	...	477 $\frac{3}{4}$	3 6
Total				623 $\frac{1}{2}$	...
Grand total of Government railways in the Commonwealth				17,775	...

7. Administration and Control of Government Railways.—In each State of the Commonwealth the policy has now been established that the railways should be kept under the control of the Government. This policy, as has been shewn, was early actualised in Australia, and, excepting in cases presenting unusual circumstances, may be regarded as the settled policy of the country. In previous Year Books (see No. 6, p. 693) will be found a description of the methods adopted by the various State Governments in the control and management of their railways.

8. Lines under Construction, and Authorised and Proposed Lines, 1913.—The following statement gives particulars up to the 30th June, 1913, of the mileage of Government railways (a) under construction, and (b) authorised for construction but not commenced:—

MILEAGE UNDER CONSTRUCTION AND AUTHORISED, 30th JUNE, 1913.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Cwlth.
Mileage under construction	534 $\frac{1}{2}$	242 $\frac{1}{2}$	360	154 $\frac{1}{2}$	471	12 $\frac{1}{2}$	1,774 $\frac{1}{2}$
Mileage authorised	636	224	1,551	324	143	...	2,878

(i.) *Lines under Construction.* In spite of the great extension of State railways which has taken place since the year 1875 throughout the Commonwealth, there are still, in some of the States, tracts of country of immense area, which are as yet practically undeveloped, and in which little in the nature of permanent settlement has been accomplished; the general policy in the States is to extend the existing lines inland, in the form of light railways, as settlement increases, and although it is true that lines which were not likely to be commercially successful in the immediate future have been constructed from time to time, for the purpose of encouraging settlement, the general principle that the railways should be self-supporting is kept in view. (a) In *New South*

Wales the lines under construction are chiefly of the "pioneer" class, and are made with a view to affording railway communication over level country to districts in which the traffic would not warrant the expenditure necessary to provide thoroughly equipped lines. As the traffic increases the permanent way is strengthened in order to allow the heavy types of engines to run over it. It is probable that railway extension in New South Wales, in the near future, will be mainly confined to lines of the "pioneer" class. The lines under construction on 30th June, 1913, were those from Taree to Wauchope (47½ miles), Macksville to Coff's Harbour (55 miles), and Glenreagh to South Grafton (27½ miles). The construction of 85½ miles of line necessary to connect Wauchope with Glenreagh has been authorised, and this line, when completed, will form an alternative main route between Newcastle and Brisbane. Other lines under construction are as follow:—Moree to Mungindi (77 miles), Forbes to Stockinbingal (88½ miles), Wagga to Tumbarumba (76½ miles), Parkes to Peake Hill (31 miles), Muswellbrook to Merriwa (51 miles), Dunedoo to Coonabarrabran (71 miles), Finley to Tocumwal (11½ miles), and Galong to Burrowa (17½ miles). (b) *Victoria*. In this State the following lines were under construction by the Board of Land and Works on the 30th June, 1913:—5 ft. 3 in. gauge: White Cliffs to Yelta (9½ miles), Bairnsdale to Orbost (60 miles), Gheringhap to Maroona (100½ miles), Crowlands to Navarre (23 miles), Benalla to Tatong (18½ miles), Rushworth to Colbinabbin (12 miles), and Chillingollah to Manangatang (18½ miles), making in all 242½ miles. (c) *Queensland*. In December, 1910, the North Coast Railway Act was passed. Under this Act a series of lines, when constructed, will link up a number of existing lines in such a way that a through line will be obtained from Rockhampton to Cairns, *via* Mackay and Townsville, a total distance of 569 miles. By the completion of this line it will be possible to travel from Cairns to the southern border of the State at Wallangarra, a total distance of about 1198 miles. At the same time the Great Western Railway Act was passed. Under this Act provision is made for the extension in a westerly or south-westerly direction of the lines already constructed to Wallal, Blackall, Winton, and Malbon, in such a manner that they will form junctions with a line to be made running north-westerly from Tobermory to Camooweal. These extensions, together with the north-westerly line, will make an aggregate distance of 1282 miles to be constructed. With the completion of both these schemes the railways of this State will be brought into direct communication with each other on both their east and west boundaries. On the 30th June, 1913, the following lines were under construction:—Woodford to Kilcoy (17 miles), Gayndah to Mundubbera (23 miles), Keefton to Imbil (24 miles), Pialba to Urangan (4 miles), Logan to Canungra (21 miles), Dalby to Jandowae (28 miles), Miles to Juandah (44 miles), Cloncurry to Mount Cuthbert (42 miles), Malanda to Millaa Millaa (9 miles), and Dimbulah Junction to Mount Mulligan (29 miles). Of the Great Western Railway the following parts are under construction: Section A: From Yarronvale to Beechal Creek (26 miles); Section B: From Benlidi south-west (26 miles). The following parts of the North Coast Railway are under construction:—Section A: From Yaamba northwards towards St. Lawrence (20 miles); Section B: From Sarina southwards towards St. Lawrence (72 miles); Section D: From Ayr southwards to Burdekin River (5 miles); Section D: From Townsville northwards to Ingham (34 miles). (d) *South Australia*. In this State the lines under construction on the 30th June, 1913, were as follow:—Goodwood to Willunga (29½ miles), Brown's Well to Paringa (40½ miles), and Pinnaroo to the Victorian Border (3½ miles), 5 ft. 3 in. gauge; Ungarra to Darke's Peak (52½ miles), Darke's Peak to the Hundred of Solomon (28½ miles), 3 ft. 6 in. gauge. (e) In *Western Australia* the following lines were in course of construction by the Public Works Department on the 30th June, 1913:—Dwellingup to Hotham (27 miles), Wickiepin to Merredin (109 miles), Wongan Hills to Mullewa (198 miles), Brookton to Kunginn (50 miles), and Yilliminning to Kondinin (73 miles). (f) *Tasmania*. At the end of the year 1912-13, the line from Wynyard to Myalla was almost completed and was opened on 7th August, 1913.

(ii.) *Lines Authorised for Construction*. (a) *New South Wales*. In addition to the North coast railway extension between Wauchope and Glenreagh (85½ miles), the

construction of lines from Tullamore to Tottenham (33 miles), Condobolin to Broken Hill (373 miles), Glenreagh to Dorrigo (42 miles), Barellan to Mirool (32 miles), and Wyalong to Cudgellico (70½ miles) had been authorised up to 30th June, 1913. (b) In *Victoria* the following lines were authorised, but their construction had not been commenced up to the end of June, 1913:—5 ft. 3 in. gauge. Tallangatta to Cudgewa (42½ miles), Swan Hill to Piangil (27½ miles), Sea Lake towards Pier Millan (17¾ miles), Heywood to Mumbannar (39½ miles), Elmore to Cohuna (57½ miles), Hamilton to Cavendish (15¾ miles), Rainbow towards Nypo (10¾ miles), and Linton to Skipton (12¾ miles). (c) *Queensland*. In addition to the new lines upon which work has been commenced, lines from Kingaroy to Tarong (19 miles), Munbilla to Mt. Edwards (16 miles), Oakey to Mt. Russell (19 miles), Roma to Oralla (29 miles), Tomoulin to Cedar Creek (5 miles), and Wowan towards Dawson River (40 miles), have been approved of by Parliament, which has also authorised the construction of the following parts of the Great Western Railway: Section A, from Beechal Creek (169 miles); Section B, from 65 Miles (283 miles); Section B, from Winton (361 miles); and Section D, from Duchess (292 miles); and in the North Coast Railway, Section A, from Marlborough to St. Lawrence (81 miles); Section B, from 33 Miles south and Mackay northward (89 miles); Section C, from Midge Point to Proserpine (13 miles); Section D, from Armidale to near Cardwell (52 miles); Section E, from Mooliba to near Cardwell (83 miles). (d) In *South Australia* the construction of lines from Eudunda to Robertson (13½ miles), Mt. Gambier to the Victorian Border (12 miles), Alawoona to Loxton (21 miles), Karoonda to Peebinga (69 miles), Karoonda to Waikerie (76½ miles), on the 5 ft. 3 in. gauge, and from Minnipa to Decrés Bay (108 miles), and Yeelanna to Mt. Hope (23¾ miles); on the 3 ft. 6 in gauge, has been authorised during the year 1912-13. It is proposed to electrify the Adelaide-Glenelg (6½ miles) line at an estimated cost of £115,000, and also in newly settled districts to construct light lines to be run by District Councils. (e) In *Western Australia* the following lines were authorised for construction up to the 30th June, 1913: Wagin to Bowelling (60 miles), Wyalkatchem to Mt. Marshall (52 miles) and Toodyay-Bolgart Extension (31 miles). (f) In *Tasmania* the construction of a line, 20 miles long, from Burnie to Flowerdale, was authorised by Parliament.

(iii.) *Transcontinental Lines*.—(a) *Port Augusta to Kalgoorlie Line*. The Transcontinental Railway Bill, passed in 1907 by the Federal Houses of Parliament, provided for the expenditure of a sum of £20,000 for a preliminary survey of a railway line connecting Western Australia with the eastern States. This survey was commenced in 1908, and was completed in March, 1909. The route of the preliminary survey may be seen on reference to the map on page 621 hereof; the route *via* Tarcoola was, for several reasons, chosen in preference to that *via* Gawler Range and Fowler's Bay. The estimated cost of construction and equipment of the line on the basis of a 4 ft. 8½ in. gauge, from Port Augusta in South Australia to Kalgoorlie in the Western Australia goldfields, a distance of 1063 miles, is £3,988,000. In September, 1911, a Bill was introduced into the Commonwealth Parliament to authorise the construction of the line, and became law in December following. In South Australia an Act was passed enabling the Commonwealth to acquire lands for the railway in South Australia not exceeding one-eighth of a mile wide on either side of the line, but no town lands are to be included at any time. In Western Australia an Act was also passed by which all necessary lands are to be granted to the Commonwealth for railway purposes. A Railway Construction Department was created by the Federal Government to carry out the work, and on the 14th September, 1912, the first sod of the Kalgoorlie-Port Augusta Railway was turned by the Governor-General at Port Augusta. A commencement has also been made at Kalgoorlie, and it is estimated that the line, which is being built from both ends, and will have a gauge of 4 ft. 8½ in., will be completed in three years. To the 28th March, 1914, 69¾ miles had been laid in the South Australian Division, and 82½ miles in the Western Australian Division. (b) *Northern Territory Transcontinental Line*. Prior to the taking over of the Northern

Territory by the Commonwealth in 1911, the South Australian Government had on more than one occasion considered the practicability of extending the main Northern line from Adelaide, which at present terminates at Oodnadatta, as far as Pine Creek, the southern terminus of the Northern Territory line from Darwin. In 1892 an Act was passed and tenders were invited for the construction of 1063 miles of 3 ft. 6 in. line on the land grant system, the grant of land offered amounting to nearly 80 million acres, but no tenders were accepted. In the Northern Territory Acceptance Act the construction of a transcontinental line from South Australia is provided for; under that Act the property in the railways from Port Augusta to Oodnadatta and from Darwin to Pine Creek has been transferred to the Commonwealth Government as from the 1st January, 1911. While the former of these lines is being worked under the control of the South Australian Commissioner by agreement between the South Australian and Federal Governments, the latter Government contemplates taking over the control of the line at an early date. In the meantime, the extension of the Darwin-Pine Creek line southward to the Katherine River is being proceeded with by the Federal Government.

9. **Cost of Construction and Equipment of Government Railways.**—The total cost of construction and equipment of the State railways of the Commonwealth at the 30th June, 1913, amounted to £171,226,323, or to an average of £9633 per mile open for traffic. Particulars as to the capital expenditure incurred in each State are given in the following table:—

**GOVERNMENT RAILWAYS.—COST OF CONSTRUCTION AND EQUIPMENT TO
30th JUNE, 1913.**

State or Territory in which Situatcd.	Length of Line Open.	Total Cost of Construction and Equipment.	Average Cost per Mile Open.	Cost per Head of Population.
	Miles.	£	£	£
New South Wales	3,930	57,003,036	14,505	31.85
Victoria	3,647	47,568,336	13,043	34.21
Queensland	4,524	29,758,652	6,578	45.34
South Australia*	2,168	16,542,177	7,630	38.14
Western Australia	2,854	14,913,128	5,225	47.03
Tasmania	507	4,400,292	8,679	22.62
Northern Territory	145	1,040,702	7,177	277.07
Commonwealth	17,775	171,226,323	9,633	35.65

* Including Port Augusta-Oodnadatta line.

It will be seen that the lowest average cost per mile open is in Western Australia, and is only £5225, which is less than one-half of the highest average cost, namely, £14,505 in New South Wales, compared with an average of £9633 for the whole Commonwealth. In Western Australia there have been comparatively few engineering difficulties to contend with, and also the system has been adopted in that State of giving contractors the right to carry traffic during the period of their contracts, with the result that, at all events in all goldfields railway contracts, the cost of construction has been considerably lessened.

(i.) *Reduction of Cost per Mile in Recent Years.* The average cost per mile of the lines constructed lately in the Commonwealth is very much less than the figure given in the above table, in consequence of the construction of light "pioneer" lines, which have already been referred to, and which it was originally considered in New South Wales could be laid down at a cost of £1750 per mile (exclusive of stations and bridges). It

should also be remembered that in the early days of railway construction there were considerable engineering difficulties to overcome, and that labour was scarce and dear. Since 1892 over one thousand four hundred miles of the "pioneer" lines have been opened in New South Wales, the average cost ranging from about £2000 to £7500 per mile, according to the difficulties met in the country traversed. The lowest cost per mile for any line previously constructed had been that of the line from Nyngan to Cobar, the average cost of which, to the end of June, 1913, was £3794. In Victoria also the cost of construction has been greatly reduced in recent years. The total cost to the 30th June, 1913, of the narrow gauge (2 ft. 6 in.) lines, having a length of one hundred and twenty-two miles, was only £324,438, which gives an average cost per mile of only £2659. In the other States also the cost of construction per mile has been reduced by building light railways as cheaply as possible. Fairly substantial permanent way is laid down with reduced ballast, and, as settlement progresses and traffic increases, the road is strengthened, and the stations and siding accommodation enlarged. The subjoined table gives examples of some of the more expensive lines, most of which were built in the early days :—

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT LARGE CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.				Total Cost.	Average Cost per Mile.	Date of Opening.
		Double Line.	Single Line.	Third Line.	Total.			
	ft. in.	m. ch.	m. ch.	m. ch.	m. ch.	£	£	
NEW SOUTH WALES—								
Penrith to Bathurst ...	4 8½	60 26½	50 64½	...	111 10½	3,485,982	31,368	1876
Sydney to Kiama ...	4 8½	24 11½	48 36½	0 63½	73 31½	2,404,955	33,126	1887
Homebush to Waratah	4 8½	74 23½	21 12	2 22½	97 57½	3,420,247	36,004	1889
VICTORIA—		Miles.	Miles.	Miles.	Miles.			
Melbourne to Bendigo	5 3	100.89*	...	...	100.89	4,874,518	48,315	1862
N. Geelong to Ballarat	5 3	41.45*	11.76	...	53.41	1,915,030	35,990	1862

* Double lines and over.

The next table gives instances of lines which have been constructed in more recent years at a comparatively small cost per mile.

The average cost per mile of the 436.35 miles comprised in the above table was £36,907, whereas the average cost of the 365 miles referred to in the next table was £1840.

GOVERNMENT RAILWAYS.—EXAMPLES OF LINES CONSTRUCTED AT SMALL CAPITAL EXPENDITURE PER MILE OPEN.

Line.	Gauge.	Length.	Total Cost.	Average Cost per Mile.	Date of Opening.
	ft. in.	Miles.	£	£	
NEW SOUTH WALES—					
Parkes to Condobolin ...	4 8½	62½	131,584	2,097	1898
Burren Junction to Collarenebri	4 8½	42½	103,586	2,434	1906
VICTORIA—					
Wangaratta to Whitfield	...	30½	39,327	1,290	1899
Wycheproof to Sealake	...	48	76,406	1,595	1895
Ultima to Chillingollah	...	20½	30,539	1,516	1909
QUEENSLAND—					
Dalby to Bell	...	23½	35,500	1,511	1906
Jericho to Blackall	...	71½	152,158	2,137	1908
SOUTH AUSTRALIA—					
Wandilo to Glencoe	...	9	11,454	1,255	1904
Cummins to Yeelanna	...	8½	14,104	1,598	1909
WESTERN AUSTRALIA—					
Southern Cross to Bullfinch	...	22	36,821	1,674	1911
Narrogin to Wickepin	...	26½	40,142	1,515	1909

The comparisons afforded in the two preceding tables are subject to certain limitations, inasmuch as the figures in each case represent the total cost to date, and the cost is naturally greater in the case of the older lines. Further, the figures given represent the cost of construction only (i.e., are exclusive of cost of equipment), and cannot therefore be directly compared with the average cost per mile open given in the preceding table.

(ii.) *Capital Cost of Construction and Equipment, Total and per Mile Open.* The increase in the total capital cost of construction and equipment of Government railways in each State and in the Commonwealth for 1901-2 and for each year from 1908 to 1913 is shewn in the following table:—

**GOVERNMENT RAILWAYS.—CAPITAL COST OF CONSTRUCTION AND EQUIPMENT,
1901-2 and 1908-13.**

TOTAL COST (£,000 OMITTED).

Year.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	West. Aust.	Tas.	N. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901-2	40,565	40,614	20,119	12,770	7,410	3,841 ¹	1,019	126,338
1908-9	47,613	42,486	23,395	13,626	11,017	4,004	1,041	143,182
1909-10	48,925	43,142	24,336	13,863	11,377	4,049	1,041	146,733
1910-11	50,863	44,122	25,899	14,375	12,020	4,080	1,041	152,400
1911-12	53,140	45,836	27,751	14,938	13,233	4,253	1,041	160,182
1912-13	57,003	47,568	29,759	16,542	14,913	4,400	1,041	171,226

COST PER MILE OPEN.

	£	£	£	£	£	£	£	£
1901-2	13,405	12,300	7,183	7,428	5,449	8,313 ¹	7,124	9,860
1908-9	13,142	12,459	6,688	7,217	5,387	8,648	7,177	9,500
1909-10	13,437	12,358	6,647	7,250	5,304	8,632	7,177	9,489
1910-11	13,534	12,524	6,696	7,429	5,060	8,675	7,177	9,481
1911-12	13,867	12,655	6,505	7,698	5,094	8,583	7,177	9,479
1912-13	14,535	13,043	6,578	7,630	5,225	8,679	7,177	9,633

1. To the 31st December, 1902.

(iii.) *Loan Expenditure on Railways.* The subjoined table shews the total loan expenditure on Government railways and tramways (including lines both open and unopen) in each State during the financial year 1901-2, and on railways only for the years 1908-9 to 1912-13. Figures shewing loan expenditures on railways only are not available for years prior to 1908-9.

GOVERNMENT RAILWAYS.—LOAN EXPENDITURE, 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'and.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£,000.	£,000.	£,000.	£,000.	£,000.	£,000.	£,000.
1901-2*	2,244	483	751	122	579	81 [†]	4,260
1908-9	1,710	544	1,053	241	538	69	4,155
1909-10	2,064	657	1,263	383	529	100	4,996
1910-11	2,127	1,230	1,686	591	748	82	6,464
1911-12	2,851	1,703	2,855	789	1,317*	120*	9,635
1912-13	3,614	1,231	2,067	1,207	1,949	116*	10,184

* Including Tramways. † For the calendar year 1901.

The following statement shews the total loan expenditure to the 30th June, 1913:—

GOVERNMENT RAILWAYS.—TOTAL LOAN EXPENDITURE IN EACH STATE AND IN THE COMMONWEALTH TO 30th JUNE, 1913.

State, etc. ...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
Expenditure ...	59,448,339	44,484,056	32,101,216	16,033,551	15,237,545	4,670,042	171,974,749

* Including Tramways.

10. Gross Revenue, Total, per Average Mile Worked, and per Train-mile Run.—

The following table shews the total revenue from all sources, the revenue per average mile worked, and the revenue per train-mile run in each State during 1901-2 and each financial year from 1909 to 1913 inclusive:—

GOVERNMENT RAILWAYS.—GROSS REVENUE, TOTAL, PER AVERAGE MILE WORKED, AND PER TRAIN MILE, 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. †	W. Aust.	Tas.	N. Ter.	C'wealth.
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TOTAL GROSS REVENUE (£,000 OMITTED).

	£	£	£	£	£	£	£	£
1901-2 ...	3,669	3,368	1,382	1,085	1,521	*233	13	11,271
1908-9 ...	5,028	4,178	2,103	1,639	1,509	280	13	14,750
1909-10 ...	5,486	4,444	2,338	1,841	1,637	284	12	16,042
1910-11 ...	6,042	4,896	2,731	2,045	1,844	278	12	17,848
1911-12 ...	6,491	5,219	3,033	2,148	1,885	313	12	19,101
1912-13 ...	6,749	5,205	3,322	2,298	2,038	327	15	19,954

GROSS REVENUE PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2 ...	1,242	1,031	493	625	1,122	*498	86	886
1908-9 ...	1,412	1,230	611	868	765	596	90	992
1909-10 ...	1,513	1,291	662	972	779	600	84	1,054
1910-11 ...	1,627	1,397	719	1,068	807	582	79	1,127
1911-12 ...	1,709	1,473	732	1,109	763	622	81	1,130
1912-13 ...	1,743	1,430	763	1,142	732	644	101	1,153

GROSS REVENUE PER TRAIN-MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	75.58	71.62	58.55	62.07	81.00	*61.99	99.27	70.74
1908-9 ...	80.06	83.81	68.29	79.87	88.25	65.31	100.85	80.74
1909-10 ...	85.12	91.11	68.80	81.49	89.35	64.33	97.05	83.26
1910-11 ...	85.27	90.58	69.96	82.55	89.19	64.06	90.59	83.45
1911-12 ...	84.12	90.53	70.48	82.59	86.53	71.73	93.43	83.00
1912-13 ...	84.43	87.77	69.54	83.26	86.98	77.99	112.82	82.83

* For the calendar year 1902. Including Port Augusta-Oodnadatta line.

11. Coaching, Goods, and Miscellaneous Receipts.—The gross revenue is composed of (a) receipts from coaching traffic, including the carriage of mails, horses, parcels, etc., by passenger trains; (b) receipts from the carriage of goods and live stock, and (c) rents and miscellaneous items. The subjoined table shews the gross revenue for 1901-2 and 1908-13, classified according to the three chief sources of receipts. The total of the three items specified has already been given in the preceding paragraph hereof.

COACHING, GOODS, AND MISCELLANEOUS RECEIPTS, 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	North'n Terr.	C'wealth.
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COACHING TRAFFIC RECEIPTS (£,000 OMITTED).

	£	£	£	£	£	£	£	£
1901-2	1,368	1,580	435	373	443	110	...	4,309
1908-9	2,008	2,041	730	529	489	138	4	5,939
1909-10	2,124	2,143	816	582	507	139	4	6,315
1910-11	2,386	2,355	935	650	596	144	4	7,070
1911-12	2,692	2,624	1,069	713	631	152	4	7,895
1912-13	2,940	2,762	1,153	749	646	161	4	8,415

GOODS AND LIVE STOCK TRAFFIC RECEIPTS (£,000 OMITTED).

1901-2	2,264	1,720	862	689	1,037	116	...	6,688
1908-9	2,965	2,067	1,347	1,060	974	134	7	8,554
1909-10	3,291	2,222	1,500	1,208	1,066	134	7	9,428
1910-11	3,585	2,458	1,772	1,341	1,174	124	5	10,459
1911-12	3,716	2,507	1,940	1,384	1,174	148	5	10,874
1912-13	3,705	2,353	2,140	1,496	1,299	155	5	11,153

MISCELLANEOUS RECEIPTS (£,000 OMITTED).

1901-2	37	68	84	36	42	7	...	274
1908-9	56	70	26	50	45	8	2	257
1909-10	71	79	22	50	64	11	2	299
1910-11	71	83	24	54	74	10	3	319
1911-12	84	87	23	52	80	12	4	342
1912-13	103	91	28	53	93	12	6	386

* Tasmanian figures for 1902 are for year ended the 31st December.

(i.) *New South Wales.* The total earnings for the past year amounted to £6,748,985, an increase over the previous year of £257,512. A satisfactory increase is shewn in passenger traffic receipts, but the goods traffic returns decreased by over £10,000. The net increase, though substantial, is considerably below that shewn in 1911-12.

(ii.) *Victoria.* In Victoria, coaching traffic receipts shewed an increase of £137,670 over the previous year, the increase in passenger receipts being £121,418. Goods traffic, on the other hand, decreased by £153,344.

(iii.) *Queensland.* In Queensland the increase in 1912-13 in gross earnings, £288,813 above 1911-12, is to some extent accounted for by the opening of new lines, but it is stated that the expansion of traffic upon the older established lines has been enormous. The chief increases in earnings were in respect of passengers £60,801, general merchandise £115,824, and minerals £64,589.

(iv.) *South Australia.* In this State every item of traffic gave an increased return on the figures of the previous year, the principal increases being in minerals (£39,494), general goods (£23,564), and passengers (£30,046). These figures are exclusive of the returns from the Port Augusta-Oodnadatta line.

(v.) *Western Australia.* In this State the earnings in 1912-13 shewed an increase of £153,249 as compared with 1911-12. Passenger traffic rendered an additional amount of £13,187, while goods and mineral receipts increased no less than £111,282.

(vi.) *Tasmania.* The gross revenue in 1912-13 shews an increase of £14,327 as compared with the previous year. This may be attributed to a good harvest, excellent markets on the mainland, renewed activity in mining, and the general prosperity of the State. Passenger traffic receipts afford an increase of £8659; while the increase in the revenue from goods and live stock is £6323.

The following table shews for the year 1912-13 the percentage which each class of receipts bears to the total gross revenue:—

PERCENTAGE OF REVENUES FROM VARIOUS SOURCES ON TOTAL REVENUE, 1912-13.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N. Ter.	C'wlth.
	%	%	%	%	%	%	%	%
Coaching traffic receipts ...	43.56	53.06	34.72	32.58	31.22	49.15	28.3	42.17
Goods and live stock traffic receipts ...	54.9	45.19	64.44	65.08	63.2	47.23	31.46	55.88
Miscellaneous receipts ...	1.54	1.75	0.84	2.34	5.58	3.62	45.24	1.95

12. Coaching Traffic Receipts per Average Mile Worked, per Passenger-train Mile, and per Passenger Journey.—The subjoined table shews the receipts from coaching traffic per average mile of line worked, per passenger-train mile, and per passenger journey in each State and in the Commonwealth for the year ended the 30th June, 1913:—

GOVERNMENT RAILWAYS.—COACHING TRAFFIC RECEIPTS PER MILE WORKED, PER PASSENGER-TRAIN MILE, AND PER PASSENGER JOURNEY, 1912-13.

State.	Number of Passenger-Train Miles.*	Number of Passenger Journeys.	Coaching Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Passenger-Train Mile.	Per Passenger Journey.
	No. ,000.	No. ,000	£ ,000.	£	d.	d.
New South Wales ...	9,667	79,490	2,940	759	72.99	8.87
Victoria ...	7,840	111,514	2,762	760	84.55	5.94
Queensland ...	3,288	19,899	1,153	265	84.16	13.90
South Australia† ...	2,804	19,382	749	372	64.02	9.25
Western Australia ...	2,485	17,920	646	232	62.39	8.65
Tasmania ...	437	1,650	161	316	88.42	23.43
Northern Territory	10	1	4	25	84.43	713.65
Commonwealth	26,531	249,856	8,415	486	76.12	8.08

* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales ...	1,446,004	Western Australia ...	1,037,360
Victoria ...	2,628,556	Tasmania ...	675,790

† Excluding the returns of the Port Augusta to Oodnadatta line.

The above table shews that, in the several States, there is a considerable difference in the amount of the average receipts per passenger journey. Disregarding the Northern Territory, this amount ranges from 5.94 pence in Victoria, where there is a large metropolitan suburban traffic, to 23.43 pence in Tasmania. The difference in these amounts cannot be accounted for by the amounts of rates charged, which are fairly uniform in the several States (see paragraph 20), but is largely due to the different traffic conditions which prevail on various lines in the Commonwealth (see paragraph 17). In order to adequately analyse these figures it would be necessary to have particulars regarding the number of passenger-miles, *i.e.*, the total distance travelled by passengers, in each State, which particulars are not generally available (see paragraph 18).

The preponderance in the number of passenger journeys in Victoria is accounted for, to a great extent, by the large number of metropolitan suburban passengers in that State. Of the total number of passengers carried in Victoria, 103,003,647 were metropolitan suburban passengers, *i.e.*, were carried between stations within twenty miles of Melbourne, while in New South Wales the number of suburban passengers (between stations within thirty-four miles of Sydney and Newcastle, and including Richmond and Braxton lines) was 70,732,975. In Sydney a large proportion of the metropolitan suburban traffic is carried on the electric and steam tramways, the number of passenger journeys during the year 1912-13 being 294,455,452. In Melbourne, on the other hand, the number of passengers carried on the cable tramways systems during the same period was 89,359,248; and on the St. Kilda-Brighton, Prahran-Malvern and the North Melbourne tramways was 13,617,964, making a total of 102,977,212, which is not as great as the number carried on the metropolitan suburban railways in Melbourne. This matter is referred to hereinafter. (See paragraph 17.)

13. Goods and Live-Stock Traffic Receipts per Mile Worked, per Goods-train Mile, and per Ton Carried.—The following table shews the gross receipts from goods and live-stock traffic per mile worked, per goods-train mile, and per ton carried, for the year ended the 30th June, 1913:—

GOVERNMENT RAILWAYS.—GOODS AND LIVE STOCK TRAFFIC RECEIPTS PER MILE WORKED, PER GOODS-TRAIN MILE, AND PER TON CARRIED, 1913.

State.	Number of Goods-Train Miles. *	Goods and Live-Stock Tonnage.	Goods and Live-Stock Traffic Receipts.			
			Gross.	Per Average Mile Worked.	Per Goods-Train Mile.	Per Ton Carried.
	No. ,000	Tons ,000.	£ ,000.	£	d.	d.
New South Wales ...	9,517	11,666	3,705	956	93.45	76.22
Victoria ...	6,394	5,150	2,353	646	88.32	109.65
Queensland ...	8,176	3,798	2,141	492	62.84	135.29
South Australia† ...	3,539	3,016	1,495	743	101.38	112.33
Western Australia ...	3,138	2,866	1,299	466	99.34	108.77
Tasmania...	569	465	155	305	65.37	79.97
Northern Territory...	21	3	5	34	57.14	432.70
Commonwealth ...	31,354	26,964	11,153	644	85.37	99.27

* The returns include the undermentioned mixed-train mileage, which has been divided between passenger-train miles and goods-train miles in the proportion of one-third and two-thirds respectively in the case of the following States:—

New South Wales ...	1,446,004	Western Australia ...	1,037,360
Victoria ...	2,628,556	Tasmania ...	675,790

† Excluding the returns of the Port Augusta to Oodnadatta line.

From the above table it may be seen that, disregarding the Northern Territory, the average amount of freight paid per ton ranges from 79.97 pence in Tasmania to 135.29 pence in Queensland. The remarks made in the preceding paragraph (12) hereof with regard to the average fare paid per passenger and to passenger-miles, apply equally to the average amount of freight paid per ton and to ton-miles.

14. Working Expenses.—In order to make an adequate comparison of the working expenses of the Government railways in the several States, allowance should be made for the variation of gauges and of physical and traffic conditions, not only on the railways of the different States, but also on different portions of the same system. Where traffic is light, the percentage of working expenses is naturally greater than where traffic is heavy; and this is especially true in Australia, where ton-mile rates are in many cases based on a tapering principle—i.e., a lower rate per ton-mile is charged upon merchandise from remote interior districts—and where on many of the lines there is but little back-loading. Further, though efforts have been made from time to time to obtain a uniform system of accounts in the several States, the annual reports of the Commissioners do not yet comprise fully comparable data of railway expenditure.

The following table shews the total annual expenditure, comprising expenses on (a) maintenance of way, works, and buildings; (b) locomotive power—repairs and renewals; (c) carriages and wagons—repairs and renewals; (d) traffic expenses; (e) compensation; and (f) general and miscellaneous charges; and also the percentage of these expenditures upon the corresponding gross revenues in each State for 1901-2 and for each year 1908-13.

**GOVERNMENT RAILWAYS.—TOTAL WORKING EXPENSES AND PERCENTAGES OF
WORKING EXPENSES UPON GROSS REVENUES, 1901-2 and 1908-13.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter	C'wealth.
TOTAL WORKING EXPENSES (£,000 OMITTED).								
	£	£	£	£	£	£	£	£
1901-2 ...	2,342	2,166	993	690	1,256	173†	35	7,655
1908-9 ...	2,953	2,515	1,227	940	974	204	13	8,826
1909-10 ...	3,276	2,818	1,414	1,069	1,097‡	212	13	9,899
1910-11 ...	3,691	3,099	1,563	1,256‡	1,216‡	216	13	11,054
1911-12 ...	4,170	3,442	1,917	1,363§	1,344	221	14	12,471
1912-13 ...	4,645	3,589	2,151	1,472§	1,507	217	14	13,595
PERCENTAGE OF WORKING EXPENSES TO GROSS EARNINGS.								
	%	%	%	%	%	%	%	%
1901-2 ...	63.85	64.32	71.83	63.54	82.58	74.31†	276.70	67.92
1908-9 ...	58.72	60.19	58.35	57.39	64.56	72.89	99.52	59.84
1909-10 ...	59.73	63.41	60.48	58.09	66.99	74.52	101.53	61.70
1910-11 ...	61.09	63.30	57.25	61.39‡	65.95	77.55	113.67	61.94
1911-12 ...	64.23	65.95	63.22	63.46§	71.31	70.71	117.25	65.29
1912-13 ...	68.82	68.95	64.76	64.03§	73.93	66.45	94.16	68.13

* Including amounts paid for pensions and gratuities, and also special expenditures and charges for belated repairs and in reduction of deficiencies as follows:—For the year 1901-2, £115,244; and for 1907-8, £150,122. † For the calendar year 1902. ‡ Including the Port Augusta-Oodnadatta line for the six months ended 30th June, 1911. § Including the Port Augusta-Oodnadatta line. || Including the cost of the replacement of rolling stock destroyed by fire (£22,649 in 1909-10 and £12,657 in 1910-11).

(i.) *New South Wales.* In this State the total working expenses in 1912-13 amounted to £4,644,881, an increase of £475,290 over the previous year. This increase was mainly owing to the large additional traffic, heavy repairs, and increased rates of pay to the staff.

(ii.) *Victoria.* In Victoria the increase in working expenses, £166,473, was mainly due to the additional train mileage, to advances in salaries and wages of the staff, and to the increased price of coal, oil, etc.

(iii.) *Queensland.* In this State the working expenses increased from £1,917,266 in 1911-12 to £2,150,991 in 1912-13. The increase is mainly due to the advances in salaries and wages, and to the expenditure which is being incurred by the additional mileage in course of construction.

(iv.) *South Australia.* In South Australia the working expenses in 1912-13 shewed an increase of £108,347, viz., from £1,363,354 to £1,471,701. This was to a large extent due to increased expenditure in the locomotive branch.

(v.) *Western Australia.* The cause of the increased expenditure (£162,623) in 1912-13 as compared with 1911-12, is mainly due to increased rates of pay.

(vi.) *Tasmania.* The working expenses in 1912-13 were £217,357, as compared with £221,172 in the previous year, being a decrease of £3815.

From the preceding table it may also be seen that during the last five financial years there have been for the whole Commonwealth increases in the percentages of working expenses to gross earnings. This increase is partly due to the fact that in four of the States, consequent on the favourable results of previous years, reductions were made in passenger fares and freight rates, while the increase in salaries and wages has also been an important factor, as well as the increased cost of materials.

(vii.) *Working Expenses per Average Mile worked and per Train Mile run.* The following table shews the working expenses per average mile worked and per train mile run in each State for the years 1901-2 and 1908-13:—

**GOVERNMENT RAILWAYS.—WORKING EXPENSES PER AVERAGE MILE WORKED
AND PER TRAIN MILE RUN, 1901-2 and 1908-13.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	Cw'ith.
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WORKING EXPENSES PER AVERAGE MILE WORKED.

	£	£	£	£	£	£	£	£
1901-2 ...	793	663	354	397	927	†370	238	602
1908-9 ...	829	740	356	500	494	434	87	594
1909-10 ...	904	819	400	565	522	447	86	651
1910-11 ...	994	884	412	656	532	451	90	698
1911-12 ...	1098	971	463	704	544	440	92	754
1912-13 ...	1200	986	494	731	541	428	95	786

WORKING EXPENSES PER TRAIN MILE RUN.

	d.	d.	d.	d.	d.	d.	d.	d.
1901-2 ...	48.26	46.07	42.05	39.44	66.89	†46.06	274.67	48.05
1908-9 ...	47.01	53.46	39.84	45.84	56.98	47.60	100.37	48.32
1909-10 ...	50.84	57.77	41.61	47.34	59.86	47.94	98.54	51.38
1910-11 ...	52.09	57.34	40.05	50.68	58.82	49.68	102.98	51.69
1911-12 ...	54.03	59.70	44.55	52.41	61.71	50.72	109.55	54.19
1912-13 ...	58.11	60.52	45.03	53.32	64.30	51.83	106.23	56.09

* Including special expenditure and charges referred to in paragraph 14 hereof. † For the calendar year 1902.

THE GOVERNMENT RAILWAY SYSTEMS OF THE COMMONWEALTH.



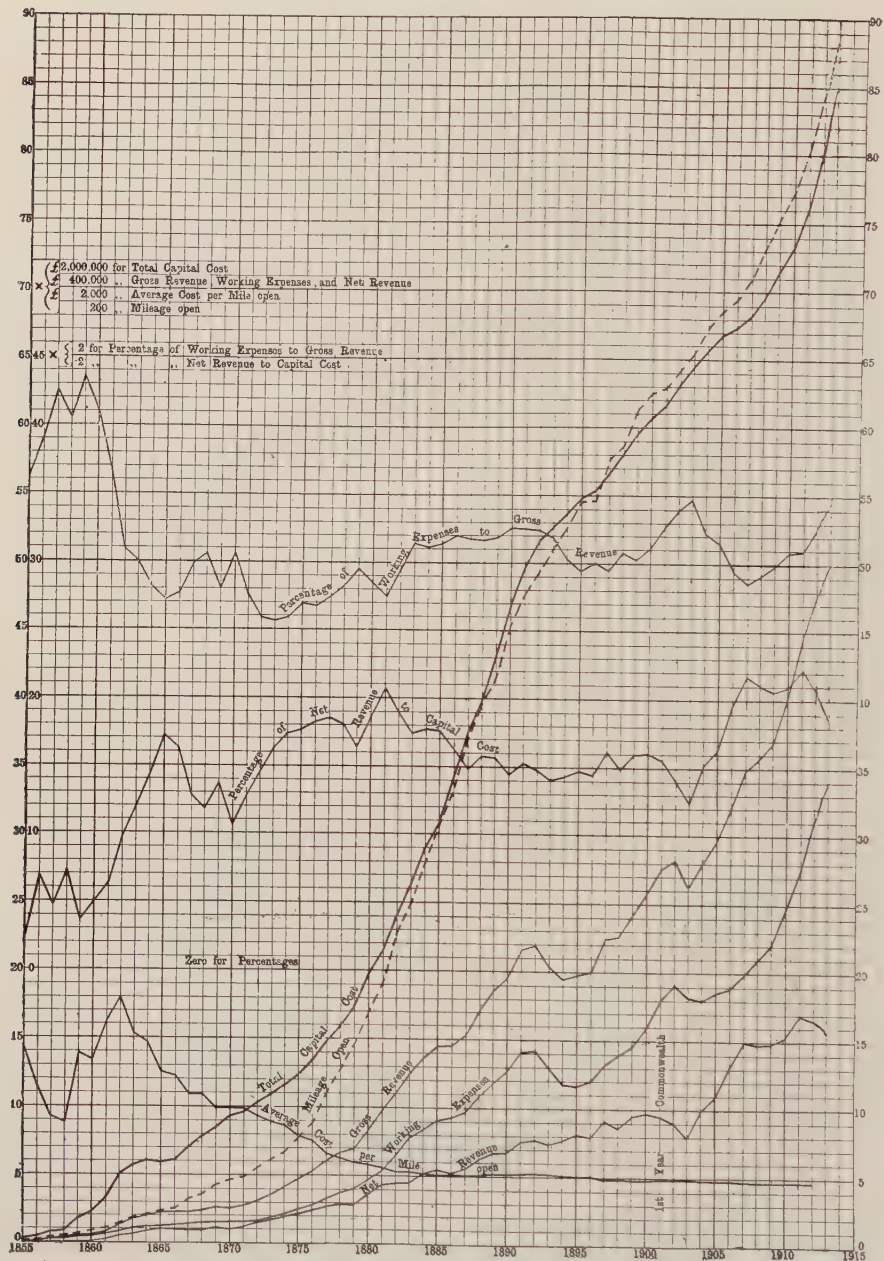
EXPLANATION OF MAP.—The continuous lines denote the existing railway lines of Australia, the heavier lines being the main routes.

Of the two transcontinental lines, viz., one joining the railways of South and Western Australia—and thus connecting continuously by railway Queensland, New South Wales, Victoria, South Australia, and Western Australia, and one connecting Oodnadatta in South Australia with Pine Creek in the Northern Territory, the former has been commenced, and is shewn — — — — ; while the latter, the construction of which is to be deferred for the present, is shewn — — — — .

LIST OF PRINCIPAL SECTIONS OF RAILWAYS.

	Miles.		Miles.		Miles.
Townsville to Winton	368	Sydney to Hay	460	Adelaide to Broken Hill	335
Townsville to Selwyn	552	" Nimmittel	291	" Oodnadatta	688
Rockhampton to Longreach	428	" Melb'ne (17 hrs.)	582½	Perth to Laverton	586
Brisbane to Cunnamulla	604	Adelaide to Melb. (17 hrs.)	482½	" Meekatharra	640
Brisbane to Sydney (26½ hrs.)	725	Melbourne to Merbein	358	" Albany	340
Newcastle to Inverell	405	" Swan Hill	215	Hobart to Launceston	133
Sydney to Bourke	508	" Murrayville	357		

GRAPHS SHEWING THE FINANCIAL POSITION OF THE GOVERNMENT RAILWAYS OF THE COMMONWEALTH, 1855 TO 1913.



(See pages—total capital cost, 612; mileage open, 602; gross revenue, 615; working expenses 619; net revenue, 626; average cost per mile, 614; percentage of working expenses to gross revenue, 619; percentage of net revenue to capital cost, 626.)

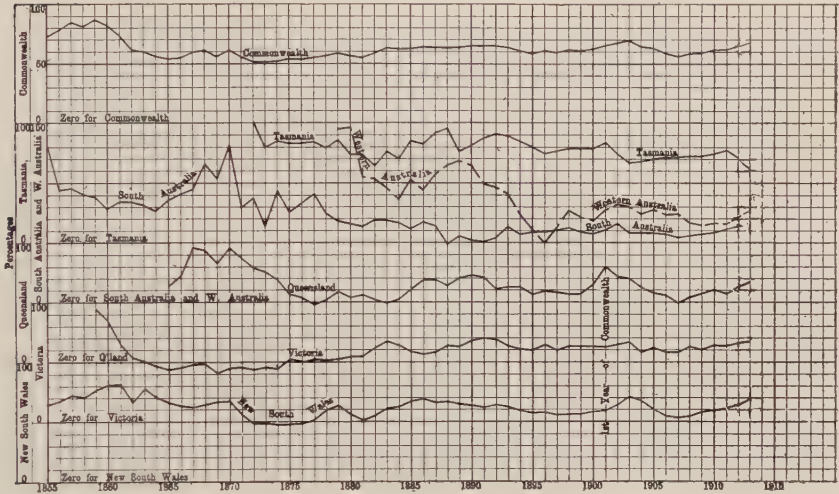
EXPLANATION OF GRAPHS. In the above diagram the base of each small square represents throughout one year. The significance of the vertical height of each square varies, however, according to the nature of the several curves.

In the heavy curve denoting the total capital cost of the railways of the Commonwealth, the vertical side of each square denotes £2,000,000.

In the three lighter curves, representing (i.) gross revenue, (ii.) working expenses, and (iii.) net revenue, the vertical height of each single square denotes £400,000. For the curve of average cost per mile open, the vertical side of the small square denotes £2000. The mileage open is shown by a dotted curve, the vertical side of each square representing 200 miles.

For the percentages a new zero is taken at "20" on the scale for the general diagram. The vertical height of each square represents 2 percent, in the curves shewing the percentage of working expenses to gross revenue. For the curve of percentage of net revenue to capital cost, the vertical height of each square represents only 0.2, that is to say, the vertical scale is ten times that of the preceding curve.

GRAPHS SHEWING PERCENTAGES OF WORKING EXPENSES TO GROSS REVENUE FOR GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1913.

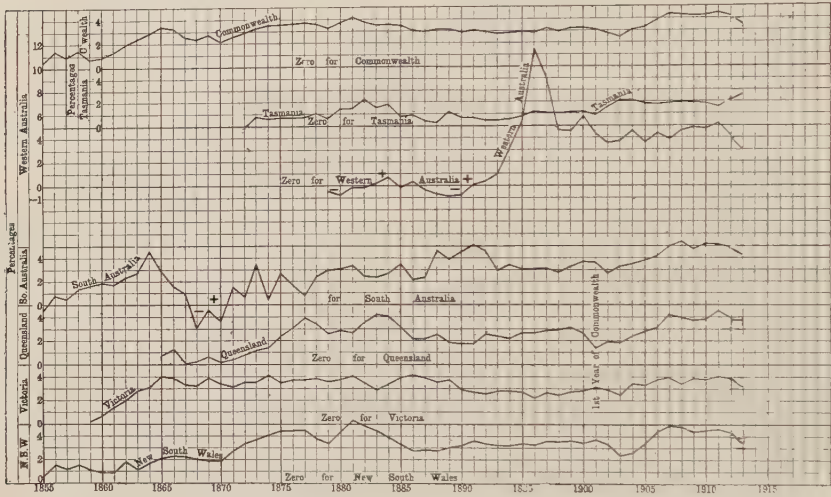


(See page 619.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes throughout 10 per cent., the heavy zero lines being different for each State and the Commonwealth, with, however, one exception, viz., that the zero line for South Australia and Western Australia is identical.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government Railway systems of the several States were inaugurated.

GRAPHS SHEWING PERCENTAGES OF NET REVENUE TO CAPITAL COST OF GOVERNMENT RAILWAYS FOR STATES AND COMMONWEALTH, 1855 TO 1913.



(See page 626.)

EXPLANATION OF GRAPHS.—In the above diagram the base of each small square represents throughout one year. The vertical side of a small square denotes 1 per cent., the thick zero lines, however, for each State and for the Commonwealth being different. This was necessary to avoid confusion of the curves.

Where the curve for any State falls below that State's zero line, loss is indicated, the working expenses having exceeded the gross revenue.

The curve for Victoria commences in 1859; that for Queensland in 1865; that for Tasmania in 1872; and that for Western Australia in 1879, these being the years in which the Government railway systems of the several States were inaugurated.

15. **Distribution of Working Expenses.**—The subjoined table shews the distribution of working expenses, among four chief heads of expenditure, for the years 1901-2 and 1908-13:—

**GOVERNMENT RAILWAYS.—DISTRIBUTION OF WORKING EXPENSES,
1901-2 and 1908-13.**

Year	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
MAINTENANCE (£,000 OMITTED).								
1901-2	554	490	356	167	247	†58	29	1,901
1908-9	628	626	395	270	210	62	7	2,198
1909-10	699	644	441	289	243	64	7	2,387
1910-11	810	803	500	343	272	66	8	2,802
1911-12	906	893	562	346	291	64	8	3,070
1912-13	1,024	930	602	329	322	59	8	3,274

LOCOMOTIVE, CARRIAGE, AND WAGON CHARGES (£,000 OMITTED).

1901-2	1,102	845	390	344	670	†64	3	3,418
1908-9	1,409	993	477	441	472	81	4	3,877
1909-10	1,616	1,226	562	512	545	85	3	4,549
1910-11	1,771	1,264	604	585	593	85	3	4,905
1911-12	1,985	1,390	794	653	656	88	4	5,570
1912-13	2,162	1,466	915	758	747	86	3	6,137

TRAFFIC EXPENSES (£,000 OMITTED).

1901-2	589	672	226	163	306	†42	2	2,000
1908-9	805	641	330	210	264	51	2	2,303
1909-10	852	684	385	242	282	52	2	2,499
1910-11	968	767	429	302	317	54	1	2,838
1911-12	1,133	901	517	335	359	57	2	3,304
1912-13	1,344	948	586	357	397	61	2	3,695

OTHER CHARGES (£,000 OMITTED).

1901-2	97	158	21	17	33	†8	...	334
1908-9	110	254	25	21	28	10	...	448
1909-10	109	264	27	26	27	11	...	464
1910-11	142	265	31	26	34	11	...	509
1911-12	145	257	45	29	38	12	...	526
1912-13	115	245	49	27	40	12	...	488

* Including special expenditure and charges referred to in paragraph 14 hereof.

† For the calendar year 1902.

16. **Net Revenue, Total and per Cent. of Capital Cost.**—The table given hereunder shews the net sums available to meet interest charges, and also the percentage of such sums upon the capital cost of construction and equipment in each State for the years 1901-2 and 1908-13:—

**GOVERNMENT RAILWAYS.—NET REVENUE AND PERCENTAGE OF NET REVENUE
UPON CAPITAL COST, 1901-2 and 1908-13.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'with.
NET REVENUE (£ ,000 OMITTED).								
1901-2 ...	£ 1,326	£ 1,202	£ 369	£ 396	£ 265	£ 160	£ —22	£ 3,616
1908-9 ...	2,076	1,663	876	698	535	76	...	5,924
1909-10 ...	2,209	1,625	924	771	541	72	...	6,143
1910-11 ...	2,351	1,797	1,167	789	628	62	—1	6,793
1911-12 ...	2,322	1,777	1,115	785	541	92	—2	6,630
1912-13 ...	2,104	1,616	1,171	1,827	531	110	—1	6,358

PERCENTAGE OF NET REVENUE TO CAPITAL EXPENDITURE.

1901-2 ...	% 3.27	% 2.96	% 1.94	% 2.98	% 3.58	% 11.56	% —1.91	% 2.87
1908-9 ...	4.36	3.91	3.74	5.10	4.85	1.90	...	4.13
1909-10 ...	4.52	3.77	3.80	5.56	4.75	1.79	...	4.18
1910-11 ...	4.61	4.07	4.51	5.49	5.22	1.53	—0.15	4.45
1911-12 ...	4.34	3.88	3.95	5.26	4.09	2.15	—0.20	4.13
1912-13 ...	3.69	3.40	3.93	15.00	3.56	2.49	0.08	3.71

* In addition to ordinary working expenses, special expenditures and charges paid out of each year's gross revenue have been deducted; see paragraph 14 above. † For the calendar year 1902.
‡ Inclusive of Port Augusta-Oodnadatta line.

Note.—The minus sign (—) denotes net loss.

(i.) *Net Revenue per Average Mile Worked and per Train Mile Run.* Tables shewing the gross earnings and the working expenses per average mile worked and per train mile run have been given above. The net earnings, i.e., the excess of gross earnings over working expenses, per average mile worked and per train mile run are shewn in the following tables :—

**GOVERNMENT RAILWAYS.—NET REVENUES PER AVERAGE MILE WORKED AND PER
TRAIN MILE RUN, 1901-2 and 1908-13.**

Year.	N.S.W.	Victoria.*	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'wealth.
NET REVENUE PER AVERAGE MILE WORKED.								
1901-2 ...	£ 449	£ 368	£ 139	£ 228	£ 195	£ †128	£ —152	£ 284
1908-9 ...	583	490	254	371	271	162	...	398
1909-10 ...	609	473	262	407	257	153	...	404
1910-11 ...	633	513	308	412	275	131	—11	429
1911-12 ...	610	502	269	405	219	182	—14	392
1912-13 ...	543	444	269	†411	191	216	—6	367

NET REVENUE PER TRAIN MILE RUN.

1901-2 ...	d. 28.87	d. 25.56	d. 16.50	d. 22.53	d. 14.11	d. †15.93	d. 175.40	d. 23.16
1908-9 ...	33.05	35.36	28.44	34.03	31.28	17.70	0.48	32.43
1909-10 ...	34.28	33.34	27.19	34.15	29.49	16.39	...	31.89
1910-11 ...	33.18	33.24	29.91	31.87	30.37	14.38	—12.39	31.77
1911-12 ...	30.09	30.83	25.93	30.18	24.82	21.01	—16.12	28.81
1912-13 ...	26.32	27.25	24.51	†29.94	22.67	26.17	6.58	26.24

* See footnote * to preceding table. † See footnote † to preceding table. ‡ See footnote ‡ to preceding table.

17. **Traffic Conditions.**—Reference has already been made to the difference in the traffic conditions on many of the lines of the Commonwealth (see paragraphs 12, 13, and 14 hereof). These conditions differ not only in the several States, but also on different lines in the same State, and this is true with regard to both passenger and goods traffic. By far the greater part of the population of Australia is confined to a fringe of country near the coast, more especially in the eastern and southern districts. A large proportion of the railway traffic between the chief centres of population is therefore carried over lines in the neighbourhood of the coast, and is thus, in some cases, open to sea-borne competition. On most of the lines extending into the more remote interior districts traffic is light; the density of population diminishes rapidly as the coastal regions are left behind; there is a corresponding diminution in the volume of traffic, while, in comparison with other more settled countries, there is but little back-loading.

As an indication of the different traffic conditions prevailing in the several States, the following table is given shewing the numbers of passenger journeys and the tons of goods carried (a) per 100 of the mean population; and (b) per average mile worked in each State during the financial year 1912-13:—

PASSENGER JOURNEYS AND TONNAGE OF GOODS AND LIVE STOCK, 1912-13.

Particulars.		N.S.W.	Vic.	Q'land.	S.A.*	W.A.	Tas.	N.T.	C'wth.
(a) PER 100 OF MEAN POPULATION.									
Passenger journeys	No.	4,467	8,077	3,126	4,506	5,853	836	35	5,278
Goods and live stock	Tons	655	373	596	701	936	235	80	569
(b) PER AVERAGE MILE OF LINE WORKED.									
Passenger journeys	No.	20,529	30,644	4,573	9,633	6,439	3,247	8	14,434
Goods and live stock	Tons	3,012	1,415	872	1,499	1,029	915	19	1,557

* Exclusive of the returns of the Port Augusta to Oodnadatta line.

Particulars of the actual numbers of passengers and tons of goods and live stock carried have already been given (see paragraph 5 hereof).

(i.) *Metropolitan and Country Passenger Traffic.* A further indication of the difference in passenger traffic conditions might be obtained from a comparison of the volume of metropolitan, suburban, and country traffic in each State. Particulars are, however, available only for the States of New South Wales and Victoria. The subjoined table shews the number of metropolitan and country passengers carried in each of the States mentioned and the revenue derived therefrom during the year 1912-13:—

METROPOLITAN, SUBURBAN, AND COUNTRY PASSENGER TRAFFIC, 1912-13.

Particulars.	Number of Passenger Journeys.			Revenue.		
	Metropolitan.	Country.	Total.	Metropolitan.	Country.	Total.
N.S.W. ...	*70,732,975	8,757,037	79,490,012	£819,419	£1,752,027	£2,571,446
Victoria ...	†103,003,647	8,510,261	111,513,908	†1,040,774	1,387,785	2,428,559

* Within 34 miles of Sydney and Newcastle, and including Richmond and Braxton lines.

† Within 20 miles of Melbourne, but exclusive of St. Kilda-Brighton tramway.

From this table it may be seen that the number of passenger-journeys in country districts in Victoria is slightly less than the corresponding number in New South Wales, while the number of metropolitan passenger-journeys in Victoria is far greater

than in New South Wales, although in the latter State both Sydney and Newcastle are included. In Sydney a larger proportion of the suburban traffic is carried by the tramway systems than in Melbourne.

For several years it has been recognised that the suburban passenger transport, both in Sydney and in Melbourne, was increasing so rapidly that it must eventually become impossible to cope with under the existing systems. A scheme for the electrification of the Melbourne suburban lines was under the consideration of the Victorian Government in 1908, but owing chiefly to a doubt as to its success from a financial standpoint, its adoption was for a time deferred. In November, 1912, however, a Commission was appointed by Parliament to again consider the 1908 scheme, and, acting on its report, the Government decided to at once proceed with the electrification of the suburban lines. Contracts for the construction of power-houses and the necessary equipment are already in hand at an estimated cost of £1,226,000, and it is anticipated that a portion of the suburban railway system will be electrically operated by June, 1915. In Sydney a Metropolitan Railway Construction Branch of the Railway Department has been created to deal specially with this matter. The Minister has approved of the construction of an underground city railway, the route has been decided upon, and the plans are in course of preparation. The preliminary work in the location of a system of electric railways for the eastern, western and northern suburbs is also in hand.

(ii.) *Goods Traffic.* The differing conditions of the traffic in each State might also, to some extent, be analysed by an examination of the tonnage of various classes of commodities carried and of the revenue derived therefrom. Comparative particulars regarding the quantities of some of the leading classes of commodities carried on the Government railways are available for all the States; corresponding information regarding the revenue derived from each class of commodity is not, however, generally available in a comparable form. In this connection it may be stated that the following resolution was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May 1909 (see paragraph 1, page 598 hereof):—"That in view of the variations in the character and classification of the goods traffic in the different States, the sub-divisions of tonnage carried and revenue in each State shall be those which best suit local conditions."

The following table shows the number of tons of various representative commodities carried, and the percentage of each class on the total tonnage carried during the financial year 1912-13:—

CLASSIFICATION OF COMMODITIES CARRIED, 1912-13.

State or Territory.	Minerals.	Fire-wood.	Grain and Flour.	Hay, Straw, and Chaff.	Wool.	Live Stock.	All other Commodities.	Total.
TONS CARRIED.								
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
New South Wales ...	*7,513,091	225,318	+736,909	262,899	113,103	547,036	2,003,172	11,401,528
Victoria ...	397,980	484,336	816,954	302,082	77,635	411,420	2,059,997	5,150,404
Queensland ...	1,432,954	267,365	333,544	169,006	70,748	378,830	1,445,134	3,797,581
South Australia†	1,493,041	133,683	422,557	85,873	25,620	110,057	745,208	3,016,039
Western Australia...	534,449	696,903	289,291	109,846	6,277	65,338	1,164,137	2,866,241
Tasmania**	70,250	13,791	††	42,890	5,215	††	167,418	299,564
North'n Territory††	567	††	§§2	††	...	107	2,105	2,781
PERCENTAGE ON TOTAL TONNAGE CARRIED.								
	%	%	%	%	%	%	%	%
New South Wales ...	65.90	1.93	16.46	2.30	0.99	4.80	17.57	100.00
Victoria ...	119.38	9.40	15.86	5.86	1.51	7.99	40.00	100.00
Queensland ...	37.73	7.04	30.88	14.45	1.86	9.98	38.06	100.00
South Australia†	49.50	4.43	14.01	2.85	0.85	3.65	24.71	100.00
Western Australia...	18.65	24.31	10.09	3.83	0.22	2.28	40.62	100.00
Tasmania**	23.45	4.60	††	14.32	1.74	††	55.89	100.00
North'n Territory††	20.39	††	§§0.07	††	...	3.85	75.69	100.00

* Exclusive of 264,722 tons of coal, on which only shunting and haulage are collected. † Up journey. ‡ Coal, stone, gravel, and sand. § Flour only. ¶ Sugar cane. * Exclusive of the returns of the Port Augusta to Oodnadatta line. ** Exclusive of West Coast and Sorell lines. †† Included in all other commodities. ‡‡ For year ended 31st December, 1912. §§ Grain only.

18. **Passenger-Mileage and Ton-Mileage.**—The useful comparisons and analyses which can be made with regard to the operations of the Government railways in the Commonwealth are to some extent limited by the absence in the annual reports of the Railway Departments of some of the States, of particulars relating to "passenger-mileage" (*i.e.*, the total distance travelled by passengers) and "ton-mileage" (*i.e.*, the total distance for which goods and live stock are carried), and it is not possible to furnish totals for the Commonwealth in respect of these important particulars. The matter of passenger-mileage and ton-mileage has already been referred to (see page 598). The following resolution in regard thereto was passed at the Interstate Conference of Railway Commissioners held in Melbourne in May, 1909:—"That, in view of the differing conditions in each State, and of the expense involved, it is undesirable to include passenger-mile and ton-mile statistics in the annual reports." The general question as to the desirability of collecting and publishing "passenger-mile" and "ton-mile" statistics by railway companies in the United Kingdom has been made the subject of inquiry by a departmental committee appointed by the President of the Board of Trade. The report of this committee has been published in England as a parliamentary paper.¹

Information regarding "passenger-miles" and "ton-miles" is available either wholly, or in part, for three of the States only, *viz.*, New South Wales, South Australia, and Tasmania, but is not available at all for either Victoria, Queensland, or Western Australia. Of the three States which give particulars of the nature indicated, New South Wales is the only one which furnishes the information in a classified form according to class of passengers and nature of commodities carried. The other two States supply particulars for all classes of passengers and goods together respectively. Western Australia furnished particulars as to ton-miles for the years 1907-12, but has since discontinued to record them. The mere record of the total number of passenger-miles and ton-miles for all classes of passengers and for all classes of goods respectively, although of considerable value, would appear to be insufficient to enable the whole field of railway operations to be adequately analysed, or the extent to which efficiency has been secured and improvements in working have been deduced to be accurately gauged.

(i.) *Passenger-Miles.* Particulars for the whole of the Commonwealth period regarding total "passenger-miles" are available for one State only, namely, Tasmania. For the same period in New South Wales, but exclusive of 1911, 1912 and 1913, particulars are only available for suburban and extended-suburban traffic—*i.e.*, including all stations within 22 miles of Newcastle, within 34 miles of Sydney, and including Richmond and Brantxton. For South Australia particulars are available for each year since 1904. No particulars are available for other States. In the tables given below the average number of passengers carried per "train," etc., is obtained by dividing the number of "passenger-miles" by the number of "passenger-train-miles." The averages given for New South Wales prior to 1911 are naturally smaller than those for the other States, since the figures for that State refer to suburban and extended-suburban traffic only.

1. See Cd. 4697. This report is also published at length in "The Statist," London, 19th June, 1909, Vol. LXII., No. 1634. In this report it is stated that ton-mile statistics have been used in India for forty years and for a longer period in America. They are now compiled by the railways of nearly all foreign countries; in England, however, they are not generally compiled. Among the more important statistics deduced from ton-miles and passenger-miles the following are mentioned:—(a) The average Train Load of goods and of passengers, obtained by dividing the ton-mileage and the passenger-mileage respectively by the train-mileage. (b) The average Wagon Load and Carriage Load, obtained by dividing the ton-mileage by the wagon-mileage and the passenger-mileage by the carriage-mileage. (c) Ton-miles per Engine Hour. (d) The average Length of Haul for goods and passengers respectively, obtained by dividing the ton-mileage and the passenger-mileage by the tonnage and the total number of passengers conveyed. (e) The average Receipts per Ton per Mile and per Passenger per Mile, obtained by dividing the goods receipts by the ton-mileage and the passenger receipts by the passenger-mileage. (f) The average Density of Traffic per mile of road or per mile of track, obtained by dividing the ton-mileage and passenger-mileage by the length of road or by the length of track.

SUMMARY OF "PASSENGER MILES," 1901-2 and 1908-13.

Year ended the 30th June.	Passenger Train Mileage.	Number of Passenger Journeys.	Total Passenger Miles.	Amount Received from Passengers.	Average Number of Passengers carried per Train.	Average Mileage per Passenger-journey.	Average Receipt per Passenger-mile.	Average Fare per Passenger-journey.
	Miles.	No. (,000 omitted).	No. (,000 omitted).	£	No.	Miles.	d.	d.

NEW SOUTH WALES.*

1902*	†	27,999	184,064	361,849	†	6.57	0.47	2.92
1908*	†	42,730	284,465	504,646	†	6.65	0.43	2.83
1909*	2,178,895†	46,734	310,399	546,904	142†	6.64	0.42	2.81
1910*	2,569,072†	48,147	341,498	564,463	133†	7.09	0.40	2.81
1911	8,093,526	60,920	906,217	2,074,860	112	14.88	0.55	8.17
1912	8,977,767	70,707	1,091,088	2,349,279	121	15.43	0.51	7.97
1913	9,667,499	79,490	1,192,584	2,571,446	123	15.00	0.54	7.76

SOUTH AUSTRALIA.

1908	1,874,318	12,839	154,038	426,261	82	12.00	0.66	7.97
1909	1,975,455	13,855	160,763	435,430	81	11.60	0.65	7.54
1910	2,116,527	15,282	177,801	482,676	84	11.63	0.65	7.58
1911§	2,404,729	16,620	195,216	535,527	81	11.75	0.65	7.73
1912||	2,614,167	18,353	213,262	589,045	81	11.62	0.67	7.70
1913||	2,803,952	19,382	228,707	619,094	81	11.80	0.64	7.66

TASMANIA.

1902	335,604	761	19,444	88,541	58	25.60	1.09	27.91
1908	356,845	1,439 ¶	32,639 ¶	112,987	91	22.65	0.83	13.84
1909	373,633	1,547	32,476	113,546	87	20.99	0.84	17.61
1910	375,425	1,650	34,066	115,181	91	20.65	0.81	16.75
1911	381,301	1,682	34,758	119,454	91	20.66	0.82	17.04
1912	395,907	1,715	34,292	126,886	86	19.99	0.87	17.75
1913	437,626	1,650	35,607	135,545	81	21.58	0.91	19.71

* Suburban lines only for years 1902-1910; includes distances within 34 miles of Sydney and including Richmond and Branxton. † Not available. ‡ Partly estimated. § Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. || Exclusive of the returns of the Port Augusta-Oodnadatta line. ¶ This and subsequent years compiled on new basis, so as to be uniform with other States.

(ii.) *Ton-Miles.* Particulars regarding total "ton-miles" are available for each year since 1901 for the States of New South Wales, South Australia, and Tasmania. Corresponding particulars for Western Australia are available for the years 1907 to 1912; figures for 1913 are not available. The average freight-paying load carried per "train" is obtained by dividing the total "ton-miles" in the fourth column by the goods-train mileage in the second column. In New South Wales the tonnage carried is exclusive of coal, on which only shunting and haulage charges are collected, and the amount of earnings specified excludes terminals. In South Australia and Tasmania they include terminals, while in Western Australia they exclude wharfage and jetty dues, but include all other charges.

SUMMARY OF "TON MILES," 1901-2 and 1908-13.

Year ended the 30th June.	Goods Train Mileage.	Total Tons Carried.	Total "Ton-Miles."	Earnings.	Average Freight-paying Load carried per "Train."	Average Miles per Ton.	Earnings per "Ton-mile."
	No.	No. (,000 omitted.)	No. (,000 omitted.)	£	Tons.	Miles.	d.

NEW SOUTH WALES.

1902	6,586,032	6,164	436,814	1,947,305	66.32	70.87	1.07
1909	7,841,413	8,972	613,469	2,544,457	78.23	68.38	1.00
1910	8,197,953	8,149	690,150	2,866,070	84.19	84.69	0.99
1911	8,913,171	10,055	810,949	3,079,783	90.98	80.65	0.91
1912	9,543,553	10,632	862,016	3,181,771	90.32	81.08	0.89
1913	9,516,748	11,402	861,940	3,153,626	90.57	75.60	0.88

SOUTH AUSTRALIA.

1902	2,468,326	1,392	170,523	681,045	69.09	122.48	0.96
1909	2,949,901	2,166	267,271	1,060,077	90.60	123.42	0.95
1910	3,303,777	2,481	303,361	1,203,373	91.82	122.27	0.96
1911*	3,451,238	2,731	328,181	1,322,339	95.09	120.15	0.97
1912†	3,414,984	2,782	334,146	1,345,879	97.87	120.11	0.97
1913†	3,538,919	3,016	355,405	1,441,859	100.42	117.84	0.97

‡ WESTERN AUSTRALIA.

1907	1,939,959	2,091	144,856	964,653	74.67	69.26	1.60
1908	1,976,204	2,059	142,719	948,373	72.22	69.32	1.59
1909	2,011,468	1,997	143,629	945,956	71.41	71.92	1.58
1910	2,280,736	2,242	163,651	1,042,789	71.75	73.00	1.53
1911	2,548,450	2,489	182,738	1,154,662	71.71	73.42	1.52
1912	2,746,827	2,542	184,748	1,154,087	67.25	72.67	1.49

§ TASMANIA.

1902||	567,314	407	14,331	109,266	25.26	35.30	1.82
1909	655,486	467	17,257	125,375	26.33	36.92	1.74
1910	684,365	423	18,966	124,675	27.71	44.84	1.58
1911	659,750	346	16,382	115,008	24.83	47.32	1.68
1912	650,570	452	17,672	138,184	27.16	39.09	1.87
1913	568,881	447	17,325	144,073	31.17	39.67	1.94

* Exclusive of the returns of the Port Augusta to Oodnadatta line for the six months ended 30th June, 1911. † Exclusive of the returns of the Port Augusta to Oodnadatta line. ‡ Particulars for 1913 and for years prior to 1907 not available. § Exclusive of live stock. || To 31st December for year 1902, to 30th June for succeeding years.

(iii.) *Density of Traffic.* The average densities of passenger traffic and of goods traffic, obtained by dividing the passenger-mileage and the ton-mileage respectively by the average length of line worked during year, are shewn in the following table for the year 1912-13 for those States for which particulars are available :—

DENSITY OF TRAFFIC PER AVERAGE MILE OF LINE WORKED, 1912-13.

Density of—				N.S.W.	S. Aust.*	W. Aust.	Tasmania.
Passenger traffic	...	...	...	308,002	143,492	†	70,092
Good	„	...	...	222,608	176,642	79,938†	34,104

* Including the Port Augusta-Oodnadatta line.

† Not available.

‡ For year ended 30th June, 1912.

(iv.) *Classification of Commodity Ton Mileage.* New South Wales is the only State for which particulars, specifying the ton-mileage and the earnings per ton-mile for various classes of commodities, are available. It is hoped that in future years it will be possible to give corresponding particulars for the other States.

The subjoined statement gives particulars for the last financial year. Miscellaneous traffic consists of timber, bark, firewood, bricks, drain-pipes, coal, road-metal in eight-ton lots, agricultural and vegetable seeds in five-ton lots, and traffic of a similar nature. A and B classes consist of lime, vegetables, tobacco leaf, caustic soda and potash, cement, copper ingots, fat and tallow, water and mining plant in six-ton lots, leather in one and three-ton lots, agricultural implements in five-ton lots, and other traffic of a similar nature. The table does not include 264,722 tons of coal on which only shunting and haulage charges were collected, nor does it include £58,411 for haulage, tonnage dues, etc.

**NEW SOUTH WALES.—SUMMARY OF TON-MILEAGE FOR THE YEAR ENDED
30th JUNE, 1913.**

Particulars.	Total Tons Carried.	Total Miles.	Average Miles per Ton.	Earnings (exclusive of Terminals).	Earnings per Ton-Mile.	Percentage on Total Tonnage.
	1000 Tons.	1000 Miles.	Miles.	£	d.	per cent.
Coal, coke, and shale ...	6,850	192,688	28.12	378,151	0.47	60.08
Other mineral ...	553	23,699	42.84	59,828	0.60	4.85
Crude ores ...	110	12,559	114.04	27,429	0.52	0.97
Miscellaneous ...	669	62,964	94.07	158,640	0.60	5.87
Firewood ...	225	6,328	28.09	20,847	0.80	1.98
Fruit ...	71	8,018	112.79	34,262	1.03	0.62
Grain and flour ...	737	176,670	239.74	284,878	0.39	6.46
Hay, straw, and chaff ...	263	52,550	199.89	80,479	0.37	2.30
Frozen meat ...	14	1,628	111.92	7,528	1.11	0.13
General goods ...	2	548	354.42	5,870	2.57	0.01
A Class ...	498	50,291	101.06	205,743	0.98	4.36
B „ ...	354	36,668	103.64	239,301	1.57	3.10
C „ ...	28	2,085	75.58	19,522	2.25	0.25
1st Class ...	133	19,033	143.33	216,211	2.73	1.17
2nd „ ...	235	35,933	153.00	540,831	3.61	2.06
Wool ...	113	34,474	304.80	277,002	1.93	0.99
Live stock ...	547	145,854	266.63	597,104	0.98	4.80
Total ...	11,402	861,940	75.60	3,153,626	0.88	100.00

19. Interest Returned on Capital Expenditure.—It may be seen from the figures given in the table in paragraph 16 hereof, that the Government railways in Australia have, on the whole, made a substantial profit during each year since the inception of the Commonwealth, but, unfortunately, the community does not get the full benefit of this profit, owing to the high rates of interest at which money for railways was borrowed in the early days. Though the average rate during the year ended the 30th June, 1912, was 4.13 per cent., an average does not accurately express the position. At an early period the need of constructing railways for the sole purpose of opening up undeveloped districts was recognised, and lines were built which could not possibly pay for some years to come: as these railways always preceded population, the money had to be raised at an almost speculative rate of interest, frequently amounting to 6 per cent., while the more recent loans have been effected at less than 4 per cent., hence the railways have been handicapped by a burdensome interest. At the present time, also, spur lines are constructed, which can scarcely be expected to instantly return revenue in excess of the expenditure, and so must, for a time at any rate, be a charge on the more developed branches of the railway system, and tend to increase the ratio of working costs to revenue. It may be noted, however, that although the loans made for expenditure on railway construction and equipment very largely increase the amount of the public debt of the Commonwealth, forming, in fact, more than half the total debt, the money borrowed has not been sunk in undertakings which give no return, but has been expended on works which are increasingly reproductive, yielding in most cases a direct return on the capital expended, and representing a greater value than their original cost. In Europe the national debts of various countries have been incurred principally through the expenses of prolonged wars, and the money has gone beyond recovery, but in Australia the expenditure is represented to a large extent by public works which pay a direct return, which is, on the whole, greater than the amount of interest due upon capital invested. In addition to the purely commercial aspect of the figures relating to the revenue and expenditure of the Commonwealth railways, it is of great importance that the object with which many of the lines were constructed should be kept clearly in view; the anticipated advantage in building these lines has been the ultimate settlement of the country rather than the direct returns from the railways themselves, and the policy of the State Governments has been to use the railway systems of the Commonwealth for the development of the country's resources to the maximum extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges. Further, the money has been spent in developing immense agricultural, pastoral and mineral resources, which add to the wealth of the community, while the benefits conferred in providing a cheap and convenient mode of transit, and in generally furthering the trade and the best interests of the Commonwealth, are incalculable.

(i.) *Profit or Loss after Payment of Working Expenses and Interest.*—The net revenue of the Government railways in each State after payment of working expenses is shewn in paragraph 16 hereof. The following table shews the amount of interest payable on expenditure from loans on the construction and equipment of the railways in each State, the actual profit or loss after deducting working expenses and interest and all other charges from the gross revenue, and the percentage of such profit or loss on the total capital cost of construction and equipment.

In this table the positive sign indicates a profit, the negative a loss. For the Commonwealth as a whole there has been a net profit on the Government railways during each of the last eight years.

The same satisfactory state of affairs applies also to the States of New South Wales, South Australia proper, and Western Australia, and with the exception of the year 1907-8

to Victoria. Tasmania and the Northern Territory both shew a loss for each year of the period 1902 to 1912, as also does Queensland, with the exception of the years 1906-7, 1910-11, and 1911-12.

GOVERNMENT RAILWAYS.—INTEREST ON LOAN EXPENDITURE, PROFIT OR LOSS, AND PERCENTAGE OF PROFIT OR LOSS ON TOTAL COST, 1901-2 and 1908-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	C'with.
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AMOUNT OF INTEREST ON RAILWAY LOAN EXPENDITURE (£,000 OMITTED).

	£	£	£	£	£	£	£	£
1901-2	1,435	1,493	837	470	235	140	47	4,657
1908-9	1,687	1,428	935	500	377	150	47	5,124
1909-10	1,687	1,471	973	508	387	152	47	5,225
1910-11	1,797	1,515	953	521	404	156	47	5,393
1911-12	1,901	1,511	1,070	542	439	159	47	5,669
1912-13	1,904	1,592	1,171	572	506	164	46	5,955

PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES (£,000 OMITTED).*

	£	£	£	£	£	£	£	£
1901-2	-108	-291	-448	-74	+30	-81	-69	-1,041
1908-9	+389	+235	-59	+198	+157	-74	-47	+799
1909-10	+522	+155	-49	+263	+153	-80	-47	+918
1910-11	+554	+282	+214	+269	+224	-93	-48	+1,402
1911-12	+421	+266	+46	+243	+101	-68	-48	+961
1912-13	+200	+24	-1	+254	+25	-54	-45	+404

PERCENTAGE OF PROFIT OR LOSS TO CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.*

	%	%	%	%	%	%	%	%
1901-2	-0.27	-0.71	-2.22	-0.59	+0.41	-2.10	-5.96	-0.82
1908-9	+0.82	+0.55	-0.25	+1.45	+1.42	-1.85	-4.49	+0.57
1909-10	+1.07	+0.36	-0.20	+1.90	+1.35	-1.97	-4.51	+0.54
1910-11	+1.00	+0.64	+0.83	+1.87	+2.87	-2.20	-4.64	+0.91
1911-12	+0.79	+0.58	+0.16	+1.63	+0.77	-1.59	-4.66	+0.60
1912-13	+0.35	+0.05	-0.00	+1.54	+0.17	-1.24	-4.37	+0.24

* The positive sign indicates a profit, the negative a loss. † Allowing for payment of special expenditure and charges (see paragraph 14 above).

20. Passenger Fares and Goods Rates.—Considerable reductions have been made in recent years in passenger fares and in freight rates. These fares and rates are not only changed from time to time to suit the convenience and varying necessities of the railways, but, as traffic is developed and revenue increased, they are also in many cases reduced to an extent consistent with the direct payment by the customers of the railways of the cost of working and interest charges.

(i.) *Passenger Fares.* On the Australian Government railways two classes are provided for passenger traffic. The fares charged may be classified as follows:—(a) Fares between specified stations (including suburban fares). (b) Fares computed according to mileage rates. (c) Return, season, and excursion fares. (d) Special fares for workmen, school pupils, and others. Fares in class (a) are issued at rates lower than the ordinary mileage rates. Fares in class (b) are charged between stations not included in

class (a). Generally, it may be said that mileage-rate fares are computed on the basis of about twopence per mile for first-class and about $1\frac{1}{2}$ pence per mile for second-class single tickets. In Tasmania, however, the fares are computed on the general basis of $1\frac{1}{2}$ pence per mile first-class, one penny per mile second-class, with a terminal charge of one penny, with one-sixth added to total. In New South Wales, Victoria, and Queensland the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per mile is made for a long journey than for a short journey. With the exception of New South Wales and Tasmania first-class return fares are generally about $1\frac{1}{2}$ to $1\frac{3}{4}$ times the single fare, and the second-class are about 30 to 45 per cent. lower than the first-class fares. In New South Wales passenger fares were reduced on the 28th May, 1911, to the amount of £70,000 per annum, and the issue of return tickets abolished except between stations in the Sydney and Newcastle suburban areas, and between the States and in the tourist districts. In Tasmania the issue of return tickets has been discontinued except in a few special cases. In Western Australia special summer recreation fares have been granted by which women and children can travel distances up to 800 miles and return for fares of 25s. and 12s. 6d. respectively. These concessions enable them to escape the heat of the goldfields and spend the summer at one of the coastal towns. In April, 1913, the New South Wales Government decided to discontinue the issue of return tickets for inter-state railway journeys, and consequently these tickets are no longer available between State and State, except between Victoria and South Australia.

The following table shews the passenger fares for different distances charged in each State, between stations for which specific fares are not fixed:—

ORDINARY PASSENGER MILEAGE RATES ON GOVERNMENT RAILWAYS, 1913.

State.	For a journey of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
FIRST-CLASS SINGLE FARES.						
New South Wales* ...	s. d. 4 6	s. d. 10 9	s. d. 23 3	s. d. 35 9	s. d. 48 3	s. d. 58 0
Victoria ...	7 6	15 0	30 0	44 6	58 2	72 0
Queensland ...	8 6	16 0	31 0	45 1	58 2	71 4
South Australia† ...	8 4	16 8	33 4	50 0	66 8	83 4
Western Australia ...	8 4	16 8	33 4	50 0	66 8	83 4
Tasmania ...	7 5	14 8	29 3	...	...	...
Average† ...	7 5	14 11	30 0	45 1	59 7	73 7
Average per passenger-mile† d.	1.78	1.79	1.80	1.80	1.78	1.77
SECOND-CLASS SINGLE FARES.						
New South Wales* ...	s. d. 2 0	s. d. 7 1	s. d. 14 9	s. d. 22 1	s. d. 25 8	s. d. 33 6
Victoria ...	5 0	10 0	20 0	29 8	38 10	47 10
Queensland ...	5 8	10 4	19 9	28 2	35 8	43 2
South Australia† ...	5 3	10 5	20 10	31 3	41 8	52 1
Western Australia ...	5 3	10 5	20 10	31 3	41 8	52 1
Tasmania ...	5 0	9 10	19 7	...	...	...
Average† ...	4 8	9 8	19 4	28 6	36 8	45 9
Average per passenger-mile† d.	1.12	1.16	1.16	1.14	1.10	1.10

* Inclusive of suburban rates for 34 miles. † Ordinary mileage rates are not published; the amounts given are therefore computed from fares between specified stations. ‡ Exclusive of Tasmania for hauls of 300 miles and upwards.

(ii.) *Parcel Rates.* In all the States parcels may be transmitted by passenger train upon payment of the prescribed rates, which are based upon weight and distance carried. The rates vary slightly in the different States. In New South Wales they range from threepence for a parcel not exceeding 3 lbs. for any distance up to 75 miles, to eleven shillings and threepence for a parcel weighing from 84 lbs. to 112 lbs., for a distance of 500 miles. In Victoria the charge for a parcel weighing from 84 lbs. to 112 lbs. for a distance over 450 miles is twelve shillings. The rate in Queensland for a parcel weighing from 85 to 112 lbs. for 500 miles is twelve shillings and sixpence; in South Australia eleven shillings and threepence; in Western Australia thirteen shillings; and in Tasmania for a distance of 250 miles the rate is five shillings and sixpence.

(iii.) *Goods Rates.* The rates charged for the conveyance of goods and merchandise may generally be divided into three classes, viz.:—(a) Mileage rates, (b) District or "development" rates, and (c) Commodity rates. In each of the States there is a number—ranging from 8 in Victoria to 15 in Tasmania—of different classes of freight. Most of the mileage rates are based upon a tapering principle, *i.e.*, a lower charge per ton-mile is made for a long haul than for a short haul; but for some classes of freight there is a fixed rate per mile irrespective of distance. District rates are charged between specified stations and are somewhat lower than the mileage rates, excepting in Western Australia, where the terms refer to a special toll of 1s. per ton on goods travelling over certain "district" railways as part payment of the extra cost of working lines laid for developmental purposes through sparsely settled districts. In addition to the ordinary classification of freights under class (a), certain commodities, such as wool, grain, agricultural produce, and crude ores, are given special rates. lower than the mileage rates, under class (c).

Space will not permit of anything like a complete analysis of goods rates in the several States being here given. As an indication of the range and amount of such rates the subjoined tables are given. The first table shews for each State the truck-load rates charged for hauls of different distances in respect of agricultural produce not otherwise specified; these special rates are here given for this class of produce, since it is generally forwarded in truck-loads.

RATES FOR AGRICULTURAL PRODUCE IN TRUCK-LOADS ON GOVERNMENT RAILWAYS, 1913.

State.	Charge per Ton in Truck-loads for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	5 0	7 6	9 6	10 6	11 4	12 0
Victoria ...	5 6	8 6	10 6	12 4	14 0	15 8
Queensland ...	4 7	8 9	11 0	12 0	13 0	14 0
South Australia ...	6 2	8 9	12 11	17 1	21 3	25 5
Western Australia ...	6 3	8 11	12 1	17 0	22 0	24 0
Tasmania ...	6 9	9 8	13 0	...	...	...
Average* ...	5 8	8 8	11 6	13 9	16 3	18 3
Average per ton-mile*	d. 1.36	1.04	0.69	0.55	0.48	0.43

* Exclusive of Tasmania for hauls of 300 miles and upwards.

The next tables shew for each State the ordinary mileage rates charged per ton for hauls of different distances in respect of (a) the highest-class freight, and (b) the lowest-class freight:—

ORDINARY GOODS MILEAGE RATES ON GOVERNMENT RAILWAYS 1913.

State.	Charge per Ton for a Haul of—					
	50 Miles.	100 Miles.	200 Miles.	300 Miles.	400 Miles.	500 Miles.

HIGHEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	23	0	44	11	78	3	99	1	107	5	115	9
Victoria ...	21	3	42	0	79	6	108	9	133	9	158	9
Queensland ...	41	8	75	0	133	4	191	8	220	10	235	5
South Australia ...	27	1	52	1	97	11	134	7	166	8	194	2
Western Australia ...	32	1	54	2	97	6	135	5	167	11	195	0
Tasmania ...	33	9	54	0	100	0	...	...	...	...	...	...
Average* ...	29	9	53	8	97	9	133	11	159	4	179	9
Average per ton-mile*	d.	7.14	d.	6.44	d.	5.86	d.	5.35	d.	4.88	d.	4.31

LOWEST-CLASS FREIGHT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
New South Wales ...	2	6	3	7	5	8	7	9	9	10	11	11
Victoria ...	4	3	6	8	10	0	11	10	13	6	15	2
Queensland ...	4	7	8	9	15	0	19	2	23	4	27	6
South Australia †	4	2	7	10	13	7	17	9	21	11	26	1
Western Australia ...	5	0	8	4	14	2	19	2	23	4	27	6
Tasmania ...	5	0	6	9	8	6	...	...	...	...	...	...
Average* ...	4	2	7	0	11	1	15	1	18	5	21	7
Average per ton-mile*	d.	1.00	d.	0.84	d.	0.66	d.	0.60	d.	0.55	d.	0.51

* Exclusive of Tasmania for hauls of 300 miles and upwards. † Less 20 per cent. for artificial manures.

The classification of commodities varies in the several States. Generally, the highest-class freight includes expensive, bulky, or fragile articles, while the lowest-class comprises many ordinary articles of merchandise, such as are particularly identified or connected with the primary industries of each State.

In New South Wales, for example, the highest-class freight comprises such articles as boots, drapery, drugs, groceries, furniture, liquors, crockery and glassware, cutlery, ironmongery, confectionery, and carpets. In the same State the lowest-class freight includes agricultural produce, ores, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, screenings, rabbit-proof netting, timber in logs, and posts and rails.

21. Numbers and Description of Rolling Stock, 1913.—The following table shews the number of locomotives and rolling stock in use on the Government railways in each State, classified according to gauge:—

CLASSIFICATION OF LOCOMOTIVES AND ROLLING STOCK, 1912-13.

STATE.	GAUGE.					
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	Total.
LOCOMOTIVES.						
New South Wales	...	...	998	...	...	998
Victoria...	...	656	...	...	12	668
Queensland	...	...	...	588	...	588
South Australia	...	174	...	195	...	369
West Australia...	...	...	...	386	...	386
Tasmania	...	...	...	76	...	83
Northern Territory	...	...	...	6	...	6
Total	...	830	998	1,251	12	3,098

PASSENGER VEHICLES.							
New South Wales	...	1,338	...	...	...	...	1,338
Victoria...	1,366	...	...	25	...	...	1,391
Queensland	...	...	629	...	...	...	629
South Australia	311	...	134	...	...	...	445
West Australia	...	...	369	...	...	...	369
Tasmania	...	...	167	...	6	...	173
Northern Territory	...	...	4	...	...	...	4
Total	1,677	1,338	1,303	25	6	...	4,349

ALL OTHER VEHICLES.							
New South Wales	...	19,590	...	...	...	...	19,590
Victoria...	16,329	...	...	212	...	...	16,541
Queensland	...	...	11,819	...	...	...	11,819
South Australia	3,347	...	4,941	...	...	...	8,288
West Australia	...	...	9,078	...	...	...	9,078
Tasmania	...	...	1,657	...	77	...	1,734
Northern Territory	...	...	142	...	...	...	142
Total	19,676	19,590	27,637	212	77	...	67,192

22. **Number of Railway Employees.**—The following table shows the number of employees in the Railway Departments of each State in the year 1901 and in each year from 1909 to 1913 inclusive, classified according to (a) salaried staff, and (b) wages staff.

From these figures it will be seen that there has been a steady increase in the number of persons engaged in the Railway Departments of the several States. During the period from 1901 to 1913, the total for the Commonwealth has increased from 42,321 to 83,503—an increase of 41,182, or about 97 per cent. The largest numerical increase for the individual States was that of New South Wales, viz., 18,627.

Separate returns for salaried and wages staff are not available for South Australia; the number of salaried staff is therefore included in the wages staff.

**GOVERNMENT RAILWAYS.—NUMBER OF EMPLOYEES IN RAILWAY DEPARTMENTS,
1901 and 1909-13.**

State.	1901.		1909.		1910.		1911.		1912.		1913.	
	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.	Salaried Staff.	Wages Staff.
New South Wales*	1,372	11,747	2,163	17,295	2,369	17,854	2,799	21,388	2,977	25,984	3,180	28,566
Victoria ...	1,432	10,524	1,644	12,825	1,831	14,735	2,111	17,622	2,243	19,910	2,471	21,115
Queensland ...	994	4,633	1,237	6,583	1,471	5,769	1,664	6,364	1,877	7,131	2,136	8,114
South Australia†	...	3,855	...	6,274	...	7,086	...	7,552	...	8,569	...	8,754
Western Australia	876	5,407	769	4,906	779	5,147	872	6,079	935	6,627	1,016	6,734
Tasmania ...	178	1,252	190	1,111	195	1,292	203	1,232	200	1,147	204	1,131
Northern Territory	+	51	+	84	+	91	6	61	7	56	7	75
Commonwealth	4,852	37,469	6,003	49,078	6,645	51,974	7,655	60,298	8,239	69,424	9,014	74,489

* Exclusive of gate-keepers with free house only. † Separate returns for salaried and wages staffs are not available; the number of salaried staff is included with the wages staff.

23. **Accidents.—Number of Killed and Injured.**—The subjoined table gives particulars of the number of persons killed and injured through train accidents and the movement of rolling stock on the Government railways in each State for the year 1900-1, and for each of the years 1908-9 to 1912-13 inclusive:—

**GOVERNMENT RAILWAYS.—TOTAL NUMBER OF PERSONS KILLED AND INJURED,
1901 and 1908-13.**

State.	1900-1.		1908-9.		1909-10.		1910-11.		1911-12.		1912-13.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales	...	*	43	249	50	338	46	368	68	513	84	582
Victoria ...	45	371	45	451	21	353	49	829	67	362	36	723
Queensland ...	13	100	11	201	14	382	16	104	25	235	27	349
South Australia...	...	50	12	155	10	243	13	215	16	186	18	226
Western Australia†	...	8	16	284	13	90	13	114	20	121	15	139
Tasmania ...	...	5	2	...	...	21	1	34	...	37	...	43
Northern Territory	...	1	8	28	...	...	...	1	...	...	...	...
Commonwealth	...	...	129	1,368	108	1,436	138	1,665	196	1,454	180	2,062

* Not available. † The returns up to and including the year 1908-9 include all accidents which have occurred on railway premises as well as those caused through train accidents and movement of rolling stock.

(c) Graphical Representation of Government Railway Development.

1. **General.**—Its railways are so important a factor in the development of Australia that it has been deemed desirable to graphically represent the main facts of their progress from their beginning, viz., from 1855 onwards. To this end the graphs shown on pages 622 to 624 have been prepared. The distribution of the railways is shown on the map on page 621.

2. **Capital Cost and Mileage Open** (page 622).—The graph shows that the ratio between these elements was, naturally enough, very variable from 1855 to 1870,

consequent upon progressive decrease in cost of construction. It then became subject to a more regular change, implying reduction of average cost.

3. **Cost per Mile Open.**—The fluctuations in cost per mile open are clearly indicated by the graph on page 622. In 1855 the cost per mile open was no less than £28,430; by 1858 it had fallen to £17,752, when it rose again to a maximum of £35,958 in 1862. It then diminished rapidly till 1883—when it reached £10,496 per mile—then slowly till 1887, when it amounted to £10,017 per mile. Again rising, this rate attained to £10,537 in 1892, since when it has, on the whole, been declining, reaching its lowest value, £9486, in 1911.

4. **Gross Revenue.**—This graph (page 622) exhibits considerable irregularities, the most striking of which are the maxima at 1892 and 1902. The fall commencing in 1892 was in consequence partly of the commercial crisis and partly of the then droughty conditions of several of the States, while that of 1902-3 was due to drought. In the latter case the recovery was very rapid.

5. **Working Expenses and Net Revenue.**—The characteristics of these graphs (page 622), are similar to those of "Gross Revenue," and the same remarks apply. It may be noted, however, that the working expenses are increasing at a faster rate than gross and net revenue.

6. **Percentage of Working Expenses to Gross Revenue.**—This is shewn for each State and for the Commonwealth on page 623, and for the Commonwealth only, on a larger scale, on page 622. The curve shews considerable fluctuations, but points also to the fact that, although a slight rise occurred in 1908, there was from 1903 to 1907 a rapid, and therefore very satisfactory, decline in the percentage of working expenses to gross revenue; since 1907, however, there has been a steady increase. The fluctuations of this percentage, for the individual States, call for no special comment.

7. **Percentage of Net Revenue on Capital Cost.**—For the Commonwealth this graph is shewn on a large scale on page 622 and on page 624 both for Commonwealth and States. After exhibiting somewhat remarkable oscillations in the earlier years, and less marked ones between 1885 and 1900, and also a rapid fall to 1903, the curve from that year shews a well marked increase until the year 1908, a slight fall occurring in that year and in 1909. The rise in 1911 is followed by a fall in 1912, and again in 1913. Maxima were reached in 1865, 1877, 1881, 1907, and 1911—viz., 3.44, 3.71, 4.14, 4.37 and 4.43 per cent.

For the individual States the results are in general very satisfactory, although the increases in the percentages for recent years have not been quite maintained in the years 1912 and 1913, with the exception of Tasmania, the figures for which State constituted a maximum in 1913.

The remarkable maximum for Western Australia in 1896 is consequent upon the large use made of the western railways at the time of the development of the Western Australian goldfields.

8. **General Indications of Graphs.**—Reviewing the cost of railways, as a whole, it may be noted that for the periods indicated the average cost per mile open is as follows:—

**GOVERNMENT RAILWAYS.—AVERAGE COST PER MILE OF LINE OPEN,
COMMONWEALTH, 1855 to 1912.**

Period ...	1855-1872.	1873-1882.	1883-1892.	1893-1902.	1903-1912.
Cost per mile ...	£ 24,561	£ 13,700	£ 10,286	£ 10,010	£ 9,614

For the period 1903 to 1907 the fall in percentage of working expenses on gross revenue was from 69.51 to 57.18 per cent., but it then gradually increased to 68.13 per cent. in 1913. The rise of the percentage of net revenue on total capital cost for the years 1903 to 1907 was from 2.48 to 4.37 per cent. For the years 1908 to 1910 fell off, but rose to 4.43 per cent. in 1911, falling to 4.14 per cent. in 1912, and to 3.71 per cent. in 1913.

While the sinister influence of the drought of 1902 is strikingly shewn in the curves (a) by the fall in the gross and net revenue in 1902-3, (b) by the fall in the percentage of net revenue on capital cost, and (c) by the increase of working expenses on gross revenue, the rapidity of recovery is even more striking, and goes to indicate the great elasticity of the economic condition of the Commonwealth. Although during the last two years there has been a decrease in the percentage, the fact that a group of railways, necessarily constructed largely in accordance with a policy of widespread development of Australia's resources rather than as mere commercial enterprises, and costing so large a sum as £171,226,323 for construction and equipment up to the 30th June, 1913, should, nevertheless, yield so large a revenue, bringing in for the year 1912-13 a return, as already pointed out, of no less than 3.71 per cent.

(D.)—Private Railways.

1. **Total Mileage Open, 1913.**—As has been stated in a previous part of this Section (see A. 3) a number of private railway lines have from time to time been constructed in the Commonwealth. By far the greater proportion of such lines, however, has been laid down for the purpose of hauling timber, coal, or other minerals, and is not generally used for the conveyance of passengers or for public traffic; in many cases the lines are often practically unballasted and are easily removable, running through bush and forest country in connection with the timber and sugar-milling industries, and for conveying firewood for mining purposes. Many of these lines may perhaps be said to be rather of the nature of tramways than of railways. Private railways referred to herein include (a) lines open to the public for general passenger and goods traffic; and (b) branch lines from Government railways and other lines which are used for special purposes and which are of a permanent description. Other lines are referred to in the part of this Section dealing with Tramways (see § 3, *Tramways*).

The following table gives particulars of private railways in the Commonwealth open for traffic up to the 30th June, 1913. A classification of these lines according to their gauge has already been given (see A. 6).

MILEAGE OF PRIVATE RAILWAYS OPEN, 1913.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
For general traffic ...	153½	14	391	...	277	166	1,001½
For special purposes ...	113½	37	21	34	696½	56	958
Total ...	267	51	412	34	973½	222	1,959½

2. **Classification of Private Railways.**—The subjoined statement gives particulars regarding private railways, so far as returns are available, in each State for the year 1912-13. In this statement the lines inset are sub-branches from the main branches specified.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1912.

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
NEW SOUTH WALES.			
	ft. in.	Miles.	
1. BRANCHES FROM NORTHERN LINE, N.S.W. GOVT. RLYS.—			
East Greta to Stanford-Merthyr and connections...	4 8½	24½	Coal and passengers
Hexham-Minni	4 8½	6	" "
Brown's line to Richmond Vale	4 8½	11½	Coal
Three other sub-branches	4 8½	5	"
Newcastle-Wallsend Co.'s lines	4 8½	4½	"
Five sub-branches... ..	4 8½	4	"
Waratah Coal Co.'s line	4 8½	4	"
Old Burwood Pit	4 8½	7½	"
Gunnedah Coal Co.'s line	4 8½	4½	"
Twelve other branches	4 8½	16	Coal, coke, ores & stone
Total	4 8½	88½	
2. BRANCHES FROM NORTH-COAST LINE GOVT. RAILWAYS—			
New Redhead Coal Co.'s lines, Adamstown to Burwood	4 8½	8	Coal and passengers
Extended, and Dudley lines	4 8½	6	" "
Seaham Coal Co.'s lines, Cockle Creek to West Wallsend and Seaham collieries	4 8½	9	Coal
Nine other branches	4 8½	9	"
Total	4 8½	23	
3. BRANCHES FROM SOUTHERN LINE, N.S.W. GOVT. RLYS.—*			
Liverpool-Warwick Farm	4 8½	½	Racecourse traffic
4. BRANCHES FROM S. COAST LINE, N.S.W. GOVT. RLYS.—†			
Mount Kembla Coal Co.	4 8½	7½	Coal
Corrimal and Balgownie	4 8½	3½	"
Australian Smelting Co., Dapto	4 8½	2½	Ores
Mount Keira Coal Co., Belmore Basin	4 8½	3	Coal
Nine other branches	4 8½	14	"
Mount Pleasant Coal Co.	3 6	3½	"
Total	4 8½	31½	
5. BRANCHES FROM WESTERN LINE, N.S.W. GOVT. RLYS.—			
Commonwealth Oil Corporation's line from Newnes Junction	4 8½	33	General
Eleven other branches	4 8½	6½	Coal, metal, and ores
Total	4 8½	39½	
6. SILVERTON TRAMWAY—			
Broken Hill and Cockburn	3 6	36	General
7. DENILIQUIN-MOAMA LINE	5 3	45	"
Total for State	4 8½	182½	
	3 6	36½	
	5 3	45	

* Three other branch private lines having a total length of 24 miles have been constructed for the conveyance of minerals, but are now closed. † The Illawarra Harbour and Land Corporation's line, 5½ miles long, constructed for general traffic is not now working.

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1912 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
VICTORIA.*			
1. KERANG TO KOONDROOK TRAMWAY	ft. in. 5 3	Miles. 14	General
2. ALTONA BAY RAILWAY— Williamsdown racecourse and pit at Altona	5 3	2½	Sand and stone
3. TOOBORAC into bush	5 3	24	Firewood
4. TRAWALLA to WATERLOO	5 3	8	" and gravel
5. CARISBROOK to NEW HAVILAH MINE	5 3	2½	" & mining timber
Total for State... ..	5 3	51	

* The Rosstown railway, running between Elsternwick and Oakleigh railway stations, about 5 miles in length, is not in use.

QUEENSLAND.

	ft. in.	Miles.	
1. BRANCHES FROM GREAT NORTHERN LINE, GOVT. RLYS. Three branch lines	3 6	2½	Mineral traffic
2. BRANCHES FROM NORTH-COAST LINE, GOVT. RAILWAYS Bundaberg to Millaquin	3 6	2	Sugar
Avondale to Invicta Mill	3 6	9	General (chiefly sugar)
3. BRANCH FROM WESTERN LINE, GOVT. RAILWAYS— Munro's tramway to Perseverance	3 6	10	Timber & farm produce
Gulland's lines to coal mines	3 6	1½	Coal
Stafford's lines to coal mines	3 6	½	"
4. BRANCHES FROM CAIRNS LINE, GOVT. RAILWAYS— Greenhill branch	2 0	4½	Sugar
Chillagoe railway, Mareeba to Mungana	3 6	103	General (chiefly coal and
Mount Garnet tramways, Lappa Jn'n to Mt. Garnet	3 6	33	" " [minerals
Stannary Hills tramway, Boonmoo to Rocky Bluffs	2 0	21½	" " "
Mount Molloy tramway	3 6	20	" " "
5. BRANCH FROM SOUTH-COAST LINE, GOVT. RAILWAYS— Beaudesert tramway to Rathdowney, Tabooba Junction to Lamington	3 6	34	" (chiefly timber
6. INGHAM TRAMWAY— East Ingham to Mount Fox	2 0	30½	[and dairy produce
Lucinda to East Ingham	2 0	17	General (chiefly sugar)
7. GERALDTON TRAMWAY— Geraldton towards Herberton... ..	2 0	20½	" (chiefly sugar)
8. MOSSMAN TRAMWAY— Port Douglas to S. Mossman and Mowbray Rivers	2 0	18	"
9. BRANCH FROM BOWEN LINE— Bowen to Proserpine	3 6	39½	"
10. BRANCH FROM CENTRAL LINE GOVT. RAILWAYS— Bacaldine to Aramac	3 6	42	" (chiefly stock)
11. BRANCH FROM CLEVELAND LINE GOVT. RAILWAYS— Norman Park to Belmont	3 6	4½	"
Total for State... ..	{ 3 6 2 0	{ 300½ 111½	

SOUTH AUSTRALIA.

	ft. in.	Miles.	
BROKEN HILL PROPRIETARY CO.'S LINE— Iron Knob to Spencer's Gulf	3 6	34	Carriage of ironst'ne flux

CLASSIFICATION OF PRIVATE RAILWAYS IN AUSTRALIA, 1912 (Continued).

Railway Lines.	Gauge.	Length	Nature of Traffic Carried, etc.
WESTERN AUSTRALIA.*			
1. MIDLAND RAILWAY— Joining Govt. lines at Midland Junction & Walkaway	3 6	277	General
2. W.A. GOLDFIELDS FIREWOOD SUPPLY Co.'s LINE— From Kurrawang into bush	3 6	96	Firewood
3. KALGOORLIE AND BOULDER FIREWOOD Co.'s LINE— Goodwood railway, from Lake Side into bush	3 6	21	"
Lancefield railway into bush	2 0	26	"
Laverton to junction Lancefield railway	2 0	6½	"
4. W.A. JARRAH SAWMILLS LINE— From Kirup to mills and into bush	3 6	26	Timber
5. TIMBER CORPORATION Co.'s LINE— From Greenbushes to mills and into bush	3 6	17½	"
6. S.-WEST TIMBER HEWERS' Co-OP. SOCIETY'S LINE— From Holyoake into bush	3 6	14½	"
7. MILLAR'S TIMBER TRADING Co.'s LINES— Upper Darling Range railway, from Pickering Brook to Canning mills and bush	3 6	8½	"
Jarrahdale and Rockingham railway, from Mundiggin to Rockingham and bush	3 6	56½	"
Yarloop railway to mills and bush	3 6	58	"
Mornington mills rly., from Wokalup to mills & bush	3 6	41½	"
Ferguson River railway, from Dardanup to mills and into bush	3 6	39½	"
Karridale railway, to Hamelin & Flinders Ports from Karridale and into bush	3 6	51½	"
Collie Mills railway, from Worsley into bush	3 6	16½	"
Kirup Saw mills into bush	3 6	20½	"
Marrinup saw mills into bush	3 6	5½	"
Jarrahdale saw mills into bush	3 6	7½	"
8. BUNNING BROS. LTD. LINES— From Lion Mill, Argyle, and Cardiff to bush	3 6	26½	"
9. NORTH DANDALUP S.M. RAILWAY— To mill and bush	3 6	10	"
10. SEXTON AND DRYSDALE'S BUSH RAILWAY— From Noggerup to bush	3 6	5	"
11. SWAN SAW MILL RAILWAY— From Lowden to mill and bush	3 6	10	"
12. W.A. TIMBER AND FIREWOOD Co. LTD. LINE— Kurramia railway, from Kalgoorlie-Kanowna railway to bush	3 6	58	Firewood
13. SONS OF GWALLA GOLD MINING Co.'s LINE— Railway into bush	1 8	26	"
14. MURCHISON FIREWOOD Co.'s LINE— Nallan wood railway, from Nallan siding to bush	3 6	28	"
15. WHIM CREEK TO BALLA RAILWAY	2 0	13	Copper Ore
16. BUCKINGHAM BROS. S.M. RAILWAY— From Muja to bush	3 6	3	Timber
17. WILGARRUP KARRI AND JARRAH Co.'s LINE— Railway into bush	3 6	3	"
Total for State...	3 6 2 0 1 8	902 45½ 26	

* To the 31st December, 1912.

TASMANIA.

1. EMU BAY RAILWAY Co.'s LINES— Burnie to Waratah Guildford to Zeehan Rayna to Dundas	ft. in. 3 6 3 6 3 6	Miles. 104½	General
2. MOUNT LYELL MINING AND RAILWAY Co.'s LINES— Strahan to Queenstown Gormanston to Kelly Basin	3 6 3 6	22 30	"
3. SANDPLY COLLIERY Co.'s LINE— North-west Bay Co.'s jetty to mine	2 0	12	Minerals
4. HUGHES TIMBER Co.'s LINE* TASMANIAN GOLD MINING Co.'s LINE— Beaconsfield to Beauty Point†	3 6 3 6	30* 3½	Timber Minerals and occasion- ally passengers
6. ZEEHAN TRAM Co.'s LINE— Emu Bay railway to British Queen	2 0	2½	Minerals and occasion- ally passengers
7. DUCK RIVER RAILWAY— Leesville to Parish of Williams†	3 6	8	Chiefly timber
8. MAGNET SILVER MINING Co.'s LINES— Magnet Junction to Magnet	2 0	10	Minerals and passengers.
Total for State...	3 6 2 0	198 24½	

* Approximate. † Also branch lines as follows:—Electric railway, 1½ miles long, to reduction works, 2 ft. gauge; surface railways, horse, ½ mile long, 2 ft. gauge. ‡ Extension under construction.

3. New South Wales.—In this State the mileage of private railways open to the public for general traffic at the end of 1912 was 153½, and of lines used for special purposes, 113½ miles. Most of these lines were constructed primarily for the purpose of conveying coal from the mines to the Government railway systems. Particulars for the year 1912 of the operations of lines open for general traffic are given, so far as available, in the table on page 647.

(i.) *Private Railways Open for General Traffic.* The most important of the lines open for general traffic are as follows:—(a) *The Deniliquin-Moama Line.* In 1874 permission was granted by the New South Wales Government to a private company to construct a line forty-five miles long from Deniliquin, in the Riverina district, to Moama, connecting with the Victorian Railway system at the Murray Bridge, near Echuca. The line was opened in 1876, the land required being granted by the Government. (b) *The Cockburn-Broken Hill Line.* This line is owned by the Silverton Tramway Company. It was opened in 1888, and connects Broken Hill with the South Australian railway system, having a total length of 36 miles. (c) *East Greta Line.* This line, belonging to the East Greta Coal Mining Company, runs from East Greta Junction, on the Northern line of the Government railways, to Stanford Merthyr, a distance of 8 miles. (d) *The New Redhead Coal Company's Railway.* The lines owned by this company branch from the Northern line of the Government railways, and run from Adamstown to Burwood Extended Colliery, and from Adamstown to Dudley Colliery, a total distance of 8 miles. The lines are worked by the Railway Department, coal waggons being supplied in part by the coal companies using the line. The colliery companies using the line pay a way-leave for right to run their coal over the line, and the Railway Commissioners allow the New Redhead Company a proportion of the revenue from the passenger and goods traffic. (e) *The Seaham Coal Company's Railways.* This line runs from Cockle Creek to West Wallsend and Seaham Collieries, and has a total length of 6 miles. (f) *Hexham-Minni Railway.* This line branches from the Northern line of the Government railways and has a length of 6 miles. Further particulars are not available. (g) *The Commonwealth Oil Corporation's Railway.* This line runs from Newnes Junction, on the Great Western line of the Government railways to the company's refinery, a distance of 33 miles. The Shay geared type of locomotive is in use on this line. (h) *The Warwick Farm Line* is a short line, three-quarters of a mile in length, connecting the Government line near Liverpool with the Warwick Farm Racecourse. Government rolling-stock is used.

In addition to the lines referred to above, legislative sanction was obtained in 1890 for the construction of a private line from the flux quarries at Tarrawingee to the Broken Hill line, a distance of 36 miles. The line was purchased by the Government in 1901, and is operated by the Silverton Tramway Company under lease from the Chief Commissioner, who pays the working expenses and receives the ordinary earnings and one-half the net receipts on special and holiday traffic.

4. Victoria.—In Victoria the only private railway open for general traffic is the Kerang-Koondrook tramway, opened in 1889. The cost of construction of this line to the end of September, 1913, was £39,182, paid out of a loan advanced by the Victorian Government. The total length is 14½ miles. The line is at present controlled by the Kerang Shire Council, but proposals have recently been made for its transfer to the Railway Department.

A line running from Elsternwick to Oakleigh, a distance of about 5 miles, has been constructed by a private company, but is not in use.

5. Queensland.—In this State private railways open for general traffic may be grouped under two heads:—(i.) Lines constructed primarily for mining purposes and (ii.) Shire tramways.

(i.) *Mining Railways.* (a) *The Chillagoe Railway.* The most important of these is the Chillagoe railway, constructed under the Mareeba to Chillagoe Railway Act 1897, and opened in 1901. This line runs from Mareeba, on the Cairns railway, to Mungana,

a distance of 103 miles. (b) *The Stannary Hills Line*. This line branches from the Chillagoe railway at Boonmoo and runs to Rocky Bluff, *via* Stannary Hills, a total distance of 21 miles. The gradients on this line, which has a gauge of 2 feet, range as high as 1 in 27, while the radius of some of the curves is as low as $1\frac{1}{4}$ chains. An additional length of 8 miles has been surveyed with a view to extending the line. (c) *The Mount Garnet Railway*. This line also branches from the Chillagoe railway at Lappa Junction and runs for a distance of 33 miles, as far as Mount Garnet.

(ii.) *Shire Tramways*. Under Part XV. of the Local Authorities Act of 1902 provision is made whereby not less than one-third of the ratepayers in any district may petition the local authority to apply to the Governor for the constitution of a tramway area. The Governor may define the area and may also approve of the plans and specifications of the proposed tramway. The amount which may be advanced by the Government for the construction or purchase of a tramway may not exceed a sum equal to £3000 for every mile of its length. As regards repayment of loans, no sum need be paid during the first three years, but after the expiration of that period the principal and interest must be repaid by half-yearly instalments on the basis provided for by the 'Local Works Loans Act, 1880 to 1899.' For the purpose of raising the money to pay these instalments the local authority may levy a rate upon all ratable property within the tramway area. The money required for the tramway may be raised by the local authorities by the issue of debentures.

6. **South Australia.**—In this State there are no private railways open for general traffic. The only private line is that owned by the Broken Hill Proprietary Company, running from Iron Knob to the seaboard near the head of Spencer's Gulf, a distance of 34 miles. The line is utilised for the carriage of flux for use in connection with the smelting works at Port Pirie.

7. **Western Australia.**—Owing to the Government's past difficulty in constructing lines urgently required for the development of the country, private enterprise was encouraged to undertake the work of construction on the land-grant principle, and two trunk lines were thus constructed. The greater part of the private lines now open, however, have been constructed in connection with the timber industry. (i.) *The Midland Railway*. This line is 277 miles in length, and runs from the Midland Junction, ten miles from Perth, to Walkaway, where it joins the Government line running to Geraldton. It was constructed under a concession of 12,000 acres of land per mile of line constructed, to be selected along the entire route of the railway. (ii.) *The Great Southern Railway*. This line, which was built by private enterprise under the land-grant system, is 242 miles in length, and was acquired by the Government by purchase on the 1st January, 1897. The total price paid, with all the interests of the private company and of the original concessionaire, was £1,100,000, which was divided by the Government for book-keeping purposes into £300,000 for the land and £800,000 for the railway. (iii.) *Millar's Timber Trading Company's Lines*. These lines have mostly been built under special timber concessions and leases. There were, at latest date available, in all ten lines situate in various parts of the State extending into the bush, whence logs are brought to the mills. The total length of these lines was approximately 306 miles. (iv.) *Other Lines*. There are also a number of other lines in various parts of the State used chiefly in connection with the timber industry. These are specified in the tabular statement on page 644.

8. **Tasmania.**—In this State there are three private lines open for general traffic. They are all situated in the western part of the island.

(i.) *The Emu Bay Railway Company*. The lines owned by this company run from Burnie to Waratah, from Guildford to Zeehan, and from Rayna to Dundas, and have a total length of 104 miles.

(ii.) *The Mount Lyell Mining and Railway Company*. The Mount Lyell railway runs from Regatta Point, Strahan to Queenstown, and the North Mount Lyell line from Kelly Basin to Linda. The former line, 22 miles in length, was constructed in 1895-6,

while the latter line, 30 miles long, was taken over from the North Mount Lyell Copper Company on the amalgamation of the two companies in 1903. The line from Kelly Basin to Linda is now run only intermittently.

(iii.) *The Magnet Silver Mining Company's Railway.* This line runs from Magnet Junction, near Waratah, on the Emu Bay Company's line to Magnet, a distance of 10 miles.

9. **Operations of Private Railways, 1912.**—The tabular statement given below shews particulars, so far as returns are available, for the year 1912 of all private railways open to the public for general traffic in the Commonwealth:—

PARTICULARS OF PRIVATE RAILWAYS OPEN FOR GENERAL TRAFFIC, 1912.

Line.	Miles Open.	Capital Cost.	Gross Revenue.	Expenses.		Train Miles.	Passenger Journeys.	Tons of Goods, etc.	No. of Employees.	Rolling Stock.		
				Working.	Interest etc.					Locos.	Coaches.	Wagons.
	No.	£	£	£	£	No.	No. '000.	Tons '000.	No.	No.	No.	No.
NEW SOUTH WALES.												
Deniliquin-Moama	45	162,672	17,877	10,148	281	36,201	16	34	47	4	6	63
Silverton Tramway	36	457,592	205,071	65,350	<i>b</i>	158,368	59	1,070	290	18	<i>c</i>	680
East Greta Railway	20	274,216	67,644	40,383	8,088	366,083	844	50	231	15	26	40
Seaham Colliery Co.	6	16,000	994	<i>b</i>	<i>b</i>	5,895	11	<i>b</i>	9	2	4	892
New Redhead Co.	8	90,000	5,388	1,870	1,937	<i>b</i>	<i>b</i>	<i>b</i>	12	<i>c</i>	<i>c</i>	<i>c</i>
Hexham-Minmi	6	<i>b</i>	1,105	886	...	9,000	14	2	9	1	4	1
C'wlth. Oil Corp'n	33	194,519	815	6,346	14,528	21,600	1	7	40	6	2	95
Total (a)	154	1,194,999	298,894	124,983	24,834	597,147	945	1,171	638	46	42	1,771
VICTORIA.												
Kerang-Koondrook	14	39,182	4,714	2,829	1,809	19,000	14	<i>b</i>	9	2	2	7
QUEENSLAND.												
Chillagoe Railway	103	420,276	72,589	23,011	...	109,542	28	122	121	8	2	161
Stannary Hills	21½	65,320	5,564	4,511	...	18,073	4	22	8	3	2	76
Mount Garnet	33	<i>b</i>	2,412	2,959	<i>b</i>	11,950	2	3	12	1	1	7
Invicta Mill	8½	19,446	538	<i>e</i> 282	972	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>
Beaudesert	34	92,000	9,210	5,172	2,905	30,644	11	15	29	1	3	<i>c</i>
Douglas-Mossman	18	42,000	4,492	2,380	1,452	12,675	7	7	12	2	3	18
E. Ingham-Mt. Fox	30½	55,307	5,205	1,342	2,757	25,410	5	67	<i>b</i>	7	5	93
Lucinda-E. Ingham	17	<i>b</i>	900	367	<i>b</i>	<i>b</i>	7	<i>b</i>	1	<i>b</i>	<i>b</i>	<i>b</i>
Bowen-Proserpine	38½	102,819	5,979	3,950	2,104	12,246	<i>b</i>	<i>b</i>	10	<i>c</i>	<i>c</i>	<i>c</i>
Geraldton Tramway	20	51,756	<i>b</i>	<i>d</i> 1,633	<i>b</i>	16,575	3	16	11	1	2	17
Mt. Molloy	20	45,813	2,319	3,293	<i>b</i>	9,924	2	3	10	<i>c</i>	<i>c</i>	7
Belmont Tramway	4½	20,853	323	851	...	4,793	1	2	<i>b</i>	<i>c</i>	<i>c</i>	<i>c</i>
Total (a)	348½	915,590	109,531	49,751	10,190	251,832	70	257	214	23	18	379
WESTERN AUSTRALIA.												
Midland Railway	277	126,587½	144,752	85,867	<i>b</i>	511,568	75	117	329	17	20	345
TASMANIA.												
Emu Bay Railway	104½	611,469	66,400	28,433	10,625	149,506	84	89	114	10	10	150
Mt. Lyell Railway	22	216,086	22,610	17,545	<i>b</i>	40,348	32	79	138	7	7	128
Nth. Mt. Lyell Rly.	30	316,638	2,653	4,691	<i>b</i>	7,177	3	10	20	4	3	56
Magnet Railway	10	18,750	463	1,482	<i>b</i>	7,280	2	1	8	3	1	4
Total (a)	166½	1,162,943	92,126	52,151	19,625	204,311	61	179	280	24	21	338
Total for Cwlth. (a)	959½	4,578,589	650,017	315,581	56,458	1,583,858	1,165	1,724	1,470	112	103	2,840

(a) Incomplete. (b) Not available. (c) Government rolling-stock used. (d) Salaries and wages only. (e) Maintenance only.

§ 3. Tramways.

1. **General.**—Tramway systems are in operation in all the States of the Commonwealth, and in recent years considerable progress has been made in the adoption of electrical traction, the benefit of which is now enjoyed by a number of the principal towns of the Commonwealth.

There are also in many parts of Australia private tramway lines which are used for special purposes, usually in connection with the timber, mining, or milling industries. Though efforts have been made to collect particulars of these lines, the returns are generally too incomplete for publication.

(i.) *Total Mileage Open and Classification of Lines.* The following table shews the total mileage of tramway lines open for general passenger traffic in each State and in the Commonwealth at the end of the year 1912-13, classified (a) according to the motive power utilised and (b) according to the nature of the authority by which the lines are controlled:—

TRAMWAYS.—CLASSIFICATIONS OF MILEAGE OPEN FOR PASSENGER TRAFFIC, 1912-13.

Nature of Motive Power and Controlling Authority.			N.S. Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas.	C'wealth.
ACCORDING TO MOTIVE POWER.									
			Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Electric	...	...	142½	56	34	49½	52½	16	350½
Steam	...	...	69½	1	...	...	...	...	70½
Cable	...	...	...	46	...	...	...	...	46
Horse	...	...	...	13	...	26	26½	...	65½
Total	...	...	212	116	34	75½	79	16	532½
ACCORDING TO CONTROLLING AUTHORITY.									
Government	...	...	208	5	...	20	26½	...	259½
Municipal	...	...	...	17	...	49½	12	7	85½
Private	...	...	4	94	34	6	40½	9	187½
Total	...	...	212	116	34	75½	79	16	532½

2. **New South Wales.**—In this State the Tramways, with but few comparatively unimportant exceptions, are the property of the Government, and are under the control of the Railway Commissioners.

(i.) *Government Tramways.* In Sydney and suburbs the Government tramways are divided into distinct systems. There were in June, 1913, seven such systems in operation within the metropolitan area, the most important being the city and suburban lines, 104½ miles in length (189½ miles single track); the North Shore line, 18½ miles in length (32 miles single track), the Ashfield to Mortlake line, (8½ miles); and Manly to the Spit (10 miles). All of these systems are now operated by electricity. There are two systems on which the motive power used is steam, namely—(a) from Kogarah to Sans Souci, 5½ miles in length, and (b) from Arncliffe to Bexley, 2½ miles long,

There are also Government steam tramways in operation at Newcastle, Broken Hill, Parramatta, from East to West Maitland, and from Sutherland to Cronulla. The gauge of line on all the Government tramways is 4 feet 8½ inches.

(a) *Sydney Tramways.* In the early sixties a horse tramway, 1½ miles long, was constructed in Sydney. Owing to the rails being laid higher than the road surface, the inconvenience thus caused to other traffic necessitated its removal, and it was not until September, 1879, that the first steam tramway was opened, running from Bridge-street to Hay-street *via* Hunter-street. In the following few years these steam tramways were considerably extended. The electric system was not introduced into the city until the close of the year 1899, though it had at that time been in operation for some years in North Sydney. The tramways in the heart of the city, running along King-street to the suburb of Woollahra, as well as those in North Sydney, were originally worked by underground cables, and have since been converted into electric lines on the overhead trolley system. In December, 1899, the electric tramway, extending from the Circular Quay along George-street to the Redfern Station, and thence to the densely-populated district of Pyrmont, was opened for traffic. This tramway is a double track, and is 3½ miles in length. Single lines have been constructed along Castlereagh and Pitt streets, with the object of relieving the traffic along George-street. The whole of the steam tramways in Sydney and suburbs, with the exception of the Kogarah-Sans Souci, and the Arncliffe-Bexley, have now been converted into electric lines, and provision for the extra power required for the electrification of the former of these lines has been made at the central power station. A new sub-station has been erected at Narrabeen.

(b) *Other Tramway Systems.* In Newcastle the first section of the tramways, from Perkins-street to Plattsburg, was opened in 1887; the total length open on the 30th June, 1913, was 28 miles. At Broken Hill and Parramatta the first sections of the tramways were opened in 1902. On the 30th June, 1913, the mileage open at Broken Hill amounted to 9, and at Parramatta to 6½ miles. The line from East to West Maitland, 4½ miles long, was opened in February, 1909. There are also three short lengths of tramways in New South Wales run by private companies. Further particulars are given below.

(c) *Particulars of all Government Tramways.* The following table shews the total length, the capital cost, the gross revenue, working expenses, and net earnings, and the percentages of working expenses on gross revenue, and of net earnings on capital cost, for the financial years 1901-2 and 1908-13:—

**NEW SOUTH WALES.—PARTICULARS OF WORKING OF GOVERNMENT TRAMWAYS,
1901-2 and 1908-13.**

Year ended the 30th June.	Total Length of Lines Open.	Capital Expended on Lines Open.	Gross Revenue.	Working Expenses.	Net Earnings.	Percentage of Working Expenses on Gross Revenue.	Percentage of Net Earnings on Capital Cost.
	Miles.	£	£	£	£	per cent.	per cent.
1901-2	104	2,829,363	631,757	541,984	89,773	85.79	3.19
1908-9	151½	4,252,731	1,097,565	875,560	222,005	79.77	5.61
1909-10	165½	4,668,797*	1,185,568	983,587	201,981	82.96	4.33
1910-11	190	5,121,586*	1,365,631	1,143,949	221,682	83.77	4.33
1911-12	195½	5,664,324*	1,581,393	1,331,413	249,980	84.19	4.41
1912-13	208	6,699,305*	1,754,566	1,572,190	182,376	89.61	2.94

* £47,455 of this sum has been paid from the Consolidated Revenue, and no interest is payable thereon.

The net result, after providing for all working expenses and £192,284 for interest on the capital invested, was a deficit of £32,456 in 1912-13, as compared with a surplus of £57,696 in the preceding year. During the year 1912-13, 294,455,452 passengers were carried without any accident resulting in loss of life to any of the passengers.

(d) *Particulars of Different Systems of Government Tramways.* In the subjoined statement particulars are given of the working of the electric and steam tramways in Sydney, and of the other Government tramways at Parramatta, Sutherland, Newcastle, Maitland, and Broken Hill.

**NEW SOUTH WALES.—PARTICULARS OF THE WORKING OF THE VARIOUS
GOVERNMENT TRAMWAYS, 1912-13.**

Line.	Length	Total Cost.	Gross Revenue.	Working Expenses.	Interest.	Profit or Loss.*
	Miles.	£	£	£	£	£
Sydney and Suburban—						
Electric	141½	6,162,063	1,616,686	1,433,972	196,446	— 13,732
Steam	8½	38,614	8,299	13,568	1,340	— 6,609
Total...	149¾	6,200,677	1,624,985	1,447,540	197,786	—20,341
Parramatta Steam	6¾	36,714	6,732	7,031	1,281	— 1,580
Sutherland to Cronulla „	7½	46,925	10,423	7,023	1,581	+ 1,819
Newcastle „	29½	295,246	84,411	79,539	10,081	— 5,209
East to West Maitland „	4½	38,125	5,464	6,683	1,329	— 2,548
Broken Hill „	10	81,618	22,551	24,374	2,774	— 4,597
Total...	208	6,699,305	1,754,566	1,572,190	214,832	—32,456

* The positive sign indicates a profit, the negative a loss.

The total capital cost shewn in the preceding table was made up as follows :—

**CAPITAL COST OF NEW SOUTH WALES GOVERNMENT TRAMWAYS AS AT
30th JUNE, 1913.**

Permanent Way.	Rolling Stock.	Power-house, Sub-stations, and Plant.	Machinery.	Workshops.	Furniture.	Total.
£3,513,784	£1,547,450	£1,342,108	£91,275	£202,296	£2,392	£6,699,305

The average cost per mile open was £16,904 for permanent way and £15,324 for all other charges, making a total of £32,228 per mile.

During the year 1912-13, twelve new extensions, amounting in all to a length of 12 miles, were opened for traffic. On the 30th June, 1913, two extensions, having a total length of a mile, were under construction, and up to the same date two additional extensions, amounting to about 3½ miles, had been authorised for construction.

(e) *Sydney Electric Tramways.* The current for the operation of the city and suburban tramways is generated at the power-house at Ultimo, which has been erected at a total cost of £989,653, including the cost of the sub-stations and plant. The current generated at the power-house is partly continuous and partly alternating, and is used both for lighting and traction purposes. The standard voltage of the continuous current is 600; the alternating current is transmitted by means of high-tension cables to sub-stations, where it is converted to continuous current at the standard voltage. The total output of the power-house, for both lighting and traction purposes, during the year 1912-13, was 89,113,036 kilowatt-hours, of which the direct-current supply was 11,022,341, and the alternating current 78,090,695 kilowatt-hours. The following table gives particulars of the working of the electric tramways for the financial years 1901-2 and 1909-13 :—

**NEW SOUTH WALES.—PARTICULARS OF SYDNEY ELECTRIC TRAMWAYS,
1901-2 and 1909-13.**

Year ended 30th June.	Mileage Open for Traffic (Track).	Total Cost of Construction and Equipment.	Output of Power-house for Traction Purposes.	Tram Miles Run.	Passengers Carried.
	Miles.	£	Kilowatt-hours 000	No. 000.	No. 000.
1902	52	1,285,014	15,472	6,175	63,517
1909-	169½	3,756,198	42,299	17,813	173,733
1910	184½	4,235,170	45,500	19,394	187,574
1911	201¾	4,585,240	61,163	21,120	214,975
1912	223	5,153,321	70,920	23,016	250,786
1913	242¾	6,162,063	79,840	25,480	275,977

Year ended 30th June.	Gross Revenue.	Working Expenses.	Net Revenue.	Number of Cars in Use.	Number of Persons Employed.
	£	£	£		
1902	340,742	257,557	83,185	436	2,855
1909	1,009,498	785,404*	224,094	906	5,514
1910	1,092,582	888,415	204,167	939	6,065
1911	1,256,672	1,033,229	223,443	985	6,667
1912	1,460,625	1,209,321	251,304	1,048	8,138
1913	1,616,686	1,433,972	182,714	1,220	9,048

* Including £50,500 written off for depreciation, etc.

The net revenue on capital invested was 2.96 per cent. in 1912-13 as against 4.89 per cent. in the preceding year.

(ii.) *Private Tramways.* There are two private tramway lines in New South Wales open for general traffic. (a) There is an electric tramway running from Rockdale to Brighton-le-Sands, a distance of one and a-quarter miles with a gauge of 4 ft. 8½ in. This line was originally opened as a steam tramway in 1885, but was subsequently converted into electric. The total cost to the end of 1911 was £13,800. During that year the number of tram-miles run was 37,000. (b) A private steam tramway passes through the township of Parramatta. Commencing at the park gates, it runs as far as the Duck River, a distance of 3¼ miles, where it connects with the Parramatta River steamers, conveying passengers and goods to and from Sydney. This line, the gauge of which is 4 ft. 8½ in., was opened for traffic in 1883. In 1912 the number of tram miles run was about 18,000, and the number of passengers conveyed about 96,000.

Particulars regarding private tramways used for special purposes are not available.

(iii.) *Sydney Harbour Ferries.* As the ferry services on the waters of Port Jackson are mainly subsidiary to the suburban railway and tramway systems, it has been thought advisable to include them here rather than under shipping. Returns for the year 1912 were received from four companies, and shew that these companies had 65 boats in commission, which were licensed to carry a total of 43,858 passengers, or an average of 674 per boat and per trip. The total number of passengers carried during the year is stated as 32,777,000, an average of 89,800 per day. In addition to the ordinary passenger traffic there are two lines providing for vehicular traffic, which afford the only rapid means of transit between the city and the northern suburbs. The four companies employed during the year a total of 888 persons. The gross revenue during 1912 amounted to £303,149, and the expenditure to £207,423, thus giving

a net revenue of £95,726. The services are well managed, and the boats constructed during recent years—double-ended screwboats—are claimed to be superior in size and equipment to boats employed on similar service in any part of the world.

3. **Victoria.**—In Melbourne there is a number of tramway systems carried on under the control of various authorities, the most important being the cable system worked by the Melbourne Tramway and Omnibus Company. There are also three lines of electric tramways, one running from St. Kilda to Brighton, a distance of five and one-eighth miles, belonging to the Government, and under the control of the Railway Commissioners; one from Flemington Bridge to the Saltwater River and Keilor Road, a distance of seven and a-quarter miles, run by a private company; and one connecting the southern suburbs of Prahran, Malvern, Caulfield, St. Kilda, Hawthorn and Kew. This system has a track mileage of 38 miles and is controlled by a joint municipal trust. There is also a private cable tramway, two and a-quarter miles in length, between Clifton Hill and Preston. There are also two tramways worked by horses—one, seven miles in length, running from Sandringham to Cheltenham *via* Beaumaris, and privately owned, the other, one and a-half miles long, from Brunswick to Coburg, and owned by the Coburg municipality, while three similar services are worked by the Melbourne Tramway and Omnibus Company, viz., Victoria Bridge to Kew, Richmond Bridge to Hawthorn, and the Zoological Gardens lines. It is intended to electrify the Brunswick-Coburg line at an early date. There is a short steam tramway, about one mile long, at Sorrento, and there are also systems of electric tramways at Ballarat, Bendigo, and Geelong, constructed and run by private companies. A number of tramways has been constructed for special purposes in various parts of the State under the provisions of the Tramway Act 1890.

(i.) *Melbourne Cable Tramways.* The Melbourne Omnibus Company began its services by the initiation of omnibus services in 1869, and in 1878 the company changed its name to the Melbourne Tramway and Omnibus Company, with a view to the introduction of a tramway system in the city and suburbs of Melbourne. It was not, however, until the year 1883, when the Melbourne Tramway and Omnibus Company's Act was passed, that the necessary authority was given by Parliament for that purpose. Under this Act the company was empowered to construct tramways in the streets of Melbourne and suburbs, with the consent of the municipalities interested, who had the option of electing to construct the tramways themselves. All the municipalities decided to exercise the option conferred upon them, and, according to the provisions of the Act, a Tramways Trust was formed. This body, which is composed of seven members from the Melbourne City Council and one member each from the councils of eleven of the surrounding municipalities, received full power to construct tramways, and to borrow money for that purpose, secured on the municipal properties and revenues and on the tramways themselves. The Trust raised sufficient funds to pay for the construction of the tramway-tracks and the engine-houses from which the cables are worked. It was required by the original Act, as amended in 1892, to complete the tramways by the end of the year 1893, and to grant a thirty-two years' lease of the tramways to the company, dating from the 1st July, 1884—when the liability for interest on the loans commenced—and expiring on the 1st July, 1916. The company is required to find sufficient capital to build the rolling-stock and to equip the lines and engine-houses with all necessary working requisites. The company pays to the Trust annually the interest due upon the loans raised, and also a sufficient sum as a sinking or redemption fund, to repay by its accumulation the principal of the loans raised by the Trust, and at the expiration of the lease must hand back the lines in good working order to the Trust. The expenses of the Trust were paid out of the loan up to the end of the year 1903, but since that date have been paid by the company to an amount not exceeding £1000 per

annum, the municipalities being liable for the remainder. The total amount the Trust was empowered to borrow was £1,650,000, which has been raised in London by means of debentures bearing interest at $4\frac{1}{2}$ per cent. The premiums received amounted to £55,794, making a total of £1,705,794. This amount had been expended by the end of the year 1893, when further loan expenditure ceased. The first line—that to Richmond—was opened to traffic in November, 1885, and the work being rapidly pushed on, the others were opened at short intervals, and the whole system was completed in 1891. The complete system consists of forty-three and a half miles of double-track cable lines, using constantly over ninety miles of wire rope, and four and a half miles of double-track horse lines. The gauge of track is 4 feet 8 $\frac{1}{2}$ inches.

(a) *Particulars of Working.* The subjoined statement shews the tram mileage, the number of passengers carried, and the revenue and expenditure for the years 1901-2 and 1909 to 1913:—

**MELBOURNE CABLE TRAMWAYS.—PARTICULARS OF WORKING, 1901-2 and
1909 to 1913.**

Year ended the 30th June.	Tram Mileage.	Number of Passengers Carried.	Revenue.			Working Expenses.			
			Traffic Rec'pts.	Other.*	Total.	Wages.	Repairs & Main- tenance	Other.*	Total.
	No.	No.	£	£	£	£	£	£	£
1902	9,226,883	47,261,572	454,683	20,152	474,835	125,596	68,689	75,269	269,554
1909	9,856,345	66,522,463	565,601	43,059	608,660	162,069	69,681	64,516	296,290
1910	10,010,975	68,695,853	581,390	45,307	626,697	162,956	78,022	63,540	304,518
1911	10,636,440	76,295,825	644,187	40,140	684,327	182,845	77,319	60,620	320,784
1912	11,313,212	84,926,712	715,524	45,268	760,792	205,883	76,040	61,996	343,919
1913	11,889,473	89,359,248	751,091	44,000	795,091	252,270	70,485	63,848	356,603

* Including amounts on account of omnibus lines.

It may be noted that the "Wages" item in the above table does not represent all that is paid in wages by the company, as a considerable portion is merged in the item "Repairs and maintenance." The figures under working expenses classed as "Other" comprise feed, fuel, licenses, rates, insurance, law costs, stationery and office expenses, salaries of staff, and directors' and auditors' fees.

(ii.) *Electric Tramways.* There are in Melbourne three electric tramway systems, namely (a) the St. Kilda-Brighton line, (b) the North Melbourne tramways, and (c) the Prahran-Malvern system.

(a) *The St. Kilda-Brighton Line.* Under the St. Kilda and Brighton Electric Street Railways Act 1904 the Board of Land and Works was authorised to construct a tramway from St. Kilda to Brighton. The amount of interest payable on the cost of the land acquired for the tramway was guaranteed by the municipalities of St. Kilda and Brighton for a period of twenty years, and authority was given by the Act to the municipalities to levy either a general or special rate not exceeding one shilling in the pound for the purpose of paying the guarantee. The profit, if any, during the first twenty years is to be set off in reduction of the guarantee. The line was opened for traffic in May, 1906, and the extension to Brighton Beach was opened in the following year. A proposal has been made to extend the line along the foreshore as far as Mordialloc. The capital cost to the 30th June, 1913, exclusive of rolling-stock, was £65,944, and of rolling-stock was £22,189, making a total of £88,133. The gauge of track is 5 ft. 3 in. The subjoined statement gives particulars of the working of this line for the financial years ended the 30th June, 1909 to 1913:—

ST. KILDA-BRIGHTON ELECTRIC STREET TRAMWAY, 1908-13.

Year ended 30th June.	Mileage Open.	Capital Cost.	Car Mileage.	Passengers Carried.	Gross Revenue.	Working Expenses.	Interest.	Net Profit or Loss.*
		£			£	£	£	£
1908	5.13	57,523	335,007	1,146,484	10,874	14,299†	2,140	—6,065
1909	5.13	58,054	338,214	1,265,492	10,941	9,075	2,038	— 172
1910	5.13	58,612	340,254	1,361,925	11,885	9,860	2,092	— 67
1911	5.13	59,007	346,849	1,410,907	12,852	9,819	2,107	+ 926
1912	5.13	60,590	367,306	1,674,918	15,012	13,283	2,078	— 349
1913	5.13	88,133	413,939	1,916,618	16,829	15,808	3,093	—2,072

* Profit is indicated by +, Loss by —. † Including an amount of £3311 for replacement of rolling-stock, etc., caused by fire.

The average fare paid per passenger was 2.09 pence in 1912-13 as against 2.13 pence in 1911-12. The gross revenue in 1912-13 was 9.76 pence per passenger car mile and £3088 per mile of track open. In the same year the percentage of working expenses on gross revenue was 93.9 as against 88.5 in the preceding year.

(b) *The North Melbourne Tramways*, extending through the northern suburbs to the Saltwater River and to Keilor Road, were constructed by a private company, and were opened for traffic towards the end of the year 1906. The route mileage for year ended 30th September, 1913, was 11½ miles, the gauge of line being 4 feet 8½ inches. The number of passengers carried during the same period was 2,591,000.

(c) *The Prahran-Malvern Tramway*. This line has been constructed under the control of a trust, which consists of five members appointed from the councils of Prahran, Malvern, St. Kilda, and Caulfield. The municipalities of Hawthorn and Kew have now been included in the scheme and will have equal representation on the trust. The total track mileage to 30th December, 1913, was 15½ miles, the total capital cost being £238,000, but an additional 22 miles has since been opened, the cost of the extension being £171,815. The gauge of the track is 4 ft. 8½ in. The current is supplied by the Melbourne Electric Supply Company Limited at a price varying according to the consumption of current and the price of fuel. Any surplus revenue, after providing for operating expenses, interest, sinking fund and renewal reserve, is to be paid to the municipal councils interested in proportion to the car mileage run in their respective districts. The lines were opened for traffic on 31st May, 1910. During the year ended 30th September, 1913, the current used for traction purposes was 1,913,266 kilowatt-hours, and the number of tram miles run was approximately 995,972, the number of passengers carried 9,110,656, the gross revenue £59,123, and the working expenses (excluding interest and renewals reserve) £39,686. The number of cars in use was 53, and the number of persons employed 260. It is intended to construct an additional 6 miles of line.

(d) *The Ballarat and Bendigo Electric Tramways* are under the control of a private company, and run along the main streets and to and from the outlying suburbs of the two cities. The total length of lines open for traffic is 22 miles, the gauge being 4 ft. 8½ in. During 1912, 5,737,149 passengers were carried, the gross revenue being £51,907, and the working expenses £35,820.

(e) *The Geelong Electric Tramways*. This line, which is privately owned, was opened for traffic in January, 1912, and up to the 31st August, 1913, the cost of construction and equipment was £43,910. The system has a length of 5½ miles of single track, the gauge being 4 ft. 8½ in. The car mileage was for the year ending on that date 184,788 miles, and the number of passengers carried 949,941. For the same period the revenue was £11,980, and the expenditure £9784.

(f) *Particulars of Working of all Electric Tramways.* The following table gives particulars of the working of all electric tramways in Victoria for each year from 1908 to 1913 inclusive:—

VICTORIA.—PARTICULARS OF WORKING OF ELECTRIC TRAMWAYS, 1908 to 1913.

Year.	Mileage Open for Traffic.	Total Cost of Construction and Equipment.	Current Generated for Traction Purposes at Central Stations.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Employees.
	Miles.	£	Kilowatt-hrs. (000 omitted.)	No. (000 omitted.)	No. (000 omitted.)	£	£	No.	No.
1908	34½	272,180*	1,562†	1,963	7,519	69,296	55,740	95	338
1909	34½	290,815	2,185	1,904	7,497	66,148	50,820	95	313
1910†	34½	275,458*	2,314	1,930	7,889	54,727*	49,087*	97	317
1911	34½	406,815†	2,998	2,376	12,198	84,545†	56,562†	117	408
1912	52	497,100†	3,504	2,703	15,343	106,478†	73,436†	119	501
1913	57	771,204	4,569	3,210	20,305	140,566†	101,098†	167	625

* Incomplete. † Exclusive of Prahran-Malvern Tramway, which was opened for traffic on 31st May, 1910. ‡ Exclusive of North Melbourne Tramway.

(iii.) *Private Tramways for Special Purposes.* There is in Victoria a number of tramways used for special purposes, chiefly in connection with the timber, mining, and milling industries. These lines have been constructed either under authority of the Department of Public Works, pursuant to Section 36 of the Tramway Act 1890, or under leases or licenses issued by the Department of Lands and Survey, pursuant to Sections 144 and 145 of the Land Act 1901. Particulars of these lines are too incomplete for publication.

4. **Queensland.**—In this State there is a system of electric tramways running through the streets of the city and suburbs of Brisbane and controlled by a private company which has its head office in London. The total length of the Brisbane system was thirty four and one-third miles at the end of the year 1913. There is also a number of tramways, having a total length of about 640 miles, run in connection with sugar mills. Particulars of Shire tramways have been given in the part of this section dealing with private railways (see p. 646).

(i.) *Brisbane Electric Tramways.* These tramways are run on the overhead trolley system, the voltage of the line current being 550. The total cost of construction and equipment to the end of the year 1909 was approximately £1,250,000, the gauge of line being 4 ft. 8½ in. The following table gives particulars of these tramways for the calendar years 1901 and 1908-12.

QUEENSLAND.—BRISBANE ELECTRIC TRAMWAYS, PARTICULARS OF WORKING, 1901 and 1908-12.

Year.	Mileage Open for Traffic.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	Number of Persons Employed
	Miles.	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901...	21	3,192,955	2,756,443	16,183,801	111,483	64,710	79	375
1908...	30½	4,915,202	3,367,972	27,221,466	177,567	*	107	619
1909...	30½	5,099,663	3,321,803	29,732,338	192,371	*	*	614
1910...	30½	5,441,032	3,524,036	32,419,276	214,265	*	119	654
1911...	34½	*	3,671,963	36,443,222	243,344	*	128	736
1912...	34½	5,798,622	3,508,410	36,375,652	243,668	*	128	762

* Not available.

(ii.) *Sugar-Mill Tramways.* There is a number of tramways in various parts of Queensland used in connection with the sugar-milling industry, chiefly for the purpose of hauling cane to the mills. Some of these lines are of a permanent nature, running through sugar-cane plantations, while others are portable lines running to various farms.

5. **South Australia.**—Up to the year 1906 there was a number of horse tramways in the principal streets of Adelaide and suburbs run by various private companies. Power to acquire part of these lines, with a view to their electrification, was given to the Adelaide Corporation by the Municipal Tramways Trust Act 1906. In accordance with the provisions of the Act, a Trust consisting of eight members, of whom two were nominated by the Governor, two elected by the City Corporation, and two each by the Suburban Corporations and the District Councils, was formed in 1907, and a length of forty-nine route miles of horse traction tramways was purchased from the private companies at a cost of £288,357. On the 9th March, 1909, the electric car system was inaugurated on the Kensington route. At the end of July, 1913, a length of 49½ route miles had been electrified and opened for traffic, the corresponding length of track opened being 88 miles. The power-house is located at Port Adelaide, nine miles from the city. It is equipped with three 1500-kilowatt turbo-alternators generating current at 11,000 volts, which are stepped down and passed through rotary converters to direct current at 600 volts. The cost of construction and equipment on the 31st July, 1913, was £1,350,710. The following table gives particulars of the tramways for the year ended 31st July, 1913:—

SOUTH AUSTRALIA.—ADELAIDE ELECTRIC TRAMWAYS.—PARTICULARS OF WORKING, 1912-13.

Year.	Mileage Open for Traffic.	Capital Cost.	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Employ'd
	Miles.	£	Kil'w'tt-hrs.	No.	No.	£	£	No.	No.
1913	49.7	1,350,710	9,169,269	5,140,706	41,576,483	310,240	207,319	170	1,113

* Inclusive of price of current.

There are also in South Australia nineteen and three-quarter miles of Government horse tramways in country districts, worked in connection with the railway system, and six and one-quarter miles of private tramways used for passenger service. The subjoined statement gives various particulars of these lines:—

SOUTH AUSTRALIA.—PARTICULARS OF HORSE TRAMWAYS, 1912-13.

Particulars.	Length.	Gauge.	Nature of Traffic.
GOVERNMENT TRAMWAYS.			
Moonta, Moonta Bay, and Hamley Flat	5½	5 3	Passengers and goods.
Gawler	1½	5 3	" "
Victor Harbour and Breakwater	1	5 3	" "
Dry Creek and Magazine	1	2 0	Explosives.
Magazine and Broad Creek	1½	2 0	" "
Port Broughton and Mundoora	10	3 6	Passengers and goods.
PRIVATE TRAMWAYS.			
Port Adelaide and Alberton	2½	5 3	Passengers.
Glenelg and Brighton	4	4 8½	" "

6. **Western Australia.**—In this State there are a number of horse tramways, amounting in all to a length of $26\frac{1}{2}$ miles, which are the property of the Government. Of these the most important is the line between Roeburne and Cossack, constructed on a 2 ft. gauge and under the control of the Colonial Secretary's Department. The length of this line is $12\frac{1}{2}$ miles. The remaining $14\frac{1}{2}$ miles belonging to the Government are made up of ten short lengths, varying from two and a half chains to four and a quarter miles, worked in connection with the jetties at various ports for the purpose of providing the necessary communication between such jetties and the goods sheds or warehouses. Most of these short lines are leased at annual rentals, and are under the supervision of the Harbour Master. Their maintenance and improvement is in the hands of the Public Works Department. In addition to these Government lines there are electric tramway systems at Perth and Kalgoorlie, carried on by private companies, and at Fremantle and Leonora, under municipal control.

(i.) *Government Tramways.* Particulars as to the working of the Government horse-tramways or as to the rents received therefrom are not generally available. The returns of the Roeburne-Cossack line for the year ended 30th June, 1913, shew that the capital cost of the line to that date was £49,319, the gross revenue for the year being £3353, and the working expenses £2498.

(ii.) *Electric Tramways.* There are now five towns in Western Australia which enjoy the benefits of electric tramway systems, namely, Perth, Fremantle, Kalgoorlie, Boulder City, and Leonora.

(a) *The Perth Electric Tramways* were opened for traffic by a private company in 1899, and the system has since been extended to many of the outlying suburbs. This tramway system was taken over by the Government on 1st July, 1913, and is now running in conjunction with the Government railways. On the 31st December, 1912, there were $22\frac{1}{2}$ miles of line open, the total cost of construction and equipment to that date being £486,291. During the year 10,242,934 passengers were carried, the gross revenue being £101,046 and the working expenses £50,576. Fifty-one motors were in use, and the number of employees was 242. The gauge of line is 3 ft. 6 in.

(b) *The Kalgoorlie and Boulder City Tramways* are also run by a private company, the first line being opened in 1902. At the beginning of 1904 legislative authority was given for the construction of lines in Boulder City and suburbs, and in November, 1904, the last section of the Boulder system was completed. At the end of the year 1912 the total mileage of the whole system—in Kalgoorlie and Boulder City—amounted to 19 miles, the total cost of construction and equipment being £449,128. During the year, 2,489,833 passengers were carried, the gross revenue being £37,811 and the working expenses £26,497. The gauge of this line is 3 ft. 6 in.

(c) *The Fremantle Tramways* were opened in November, 1905, under the control of the municipality. On the 31st August, 1913, there were $8\frac{3}{4}$ miles of line open for traffic, the cost of construction and equipment at that date being £101,554. This line has a gauge of 3 ft. 6 in. During the year 4,115,000 passengers were carried, the gross revenue being £32,000 and the working expenses £25,300.

(d) *The Leonora-Gwalia Tramway*, three miles in length, formerly a steam tramway, was opened for traffic by electrification on 5th October, 1908. This tramway is under municipal control, and has a gauge of 3 ft. 6 in. The cost of construction is approximately £5500, and during the year ended 31st October, 1913, 99,925 passengers were carried.

(e) *Particulars of Working of all Electric Tramways.* The subjoined table shews, so far as returns are available, particulars of the working of all electric tramway systems in the State for the years 1901 and 1908-12.

**WESTERN AUSTRALIA.—PARTICULARS OF ELECTRIC TRAMWAYS,
1901 and 1908-12.**

Year.	Mileage Open for Traffic.*	Total Cost of Construc- tion and Equip- ment	Current Generated.	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	No. of Cars in Use.	No. of Persons Em- ployed.
	Miles.	£	Kilowatt-hrs.	No.	No.	£	£	No.	No.
1901	16½	367,037	†	721,056	†	46,270	26,673	30	†
1908	47½	968,567	4,065,616	2,316,325	13,136,065	142,182	91,770	89	354
1909	50	1,018,548	3,952,3' 6	2,304,616	13,579,603	144,320	98,236	101	366
1910	53	1,035,357	†3,741,628	2,139,524	12,420,830	139,824	88,110	106	331
1911	53	1,039,421	4,395,044	2,360,341	14,399,558	158,657	93,003	104	359
1912	53	1,042,474	4,535,424	2,527,155	16,947,301	172,474	103,927	105	431

* For the years 1908 to 1912 inclusive, miles of route are given; for 1901 the figures represent miles of single track. † Not available. ‡ Exclusive of Leonora Tramway.

7. *Tasmania.*—In Hobart there is a system of electric tramways, amounting in all to a length of nine miles, owned by a private company. Under the authority of the Launceston Tramway Act of 1906 the Launceston City Council entered into an agreement with a private company for the construction of a system of electric tramways in the city and suburbs of Launceston. The agreement provided that the company was to run the tramways for a period of twenty-five years, when the Council could purchase the lines and stock at cost price; the electric power required was to be supplied by the Council. This agreement, however, lapsed, and the Council has constructed the tramways, and is running them as a municipal undertaking. The system, which was opened on the 16th August, 1911, has a route mileage of about 7½ miles, the gauge of track being 3 ft. 6 in. The total cost of construction and equipment to the end of July, 1913, amounted to £70,871. Fourteen cars with motors were in use; and the number of employees totalled 80. The number of passengers carried during the year 1912-13 was 2,170,000 and the car mileage was 327,565 miles. The gross revenue for the same period was £17,155, and the working expenses £13,332.

(i.) *Hobart Electric Tramways.* These tramways were opened for traffic in 1893, the total cost of construction and equipment to the 31st December, 1912, being £92,121. The line has a 3 ft. 6 in. gauge. The following table gives particulars of the working of this system for the years 1901 and 1908-12:—

**TASMANIA.—PARTICULARS OF WORKING OF HOBART ELECTRIC TRAMWAYS,
1901 and 1908-12.**

Year.	Mileage Open for Traffic.	Total cost of Construc- tion and Equip- ment.	Current Generated	Tram Miles Run.	Number of Passengers Carried.	Gross Revenue.	Working Expenses.	Number of Cars in Use.	Number of Per- sons Em- ployed.
	Miles.	£	Kilowatt- hours	No.	No.	£	£	No.	No.
1901	9	90,000	...	321,633	1,734,120	16,097	11,735	20	90
1908	9	90,000	622,207	453,773	2,677,018	26,789	14,446	23	105
1909	9	90,824	748,878	490,410	2,772,047	27,502	15,682	25	105
1910	9	91,788	746,377	518,024	3,074,782	29,490	16,820	25	108
1911	9	92,121	845,403	484,295	3,363,500	32,780	19,310	28	110
1912	9	92,121	949,926	493,005	3,821,293	36,381	20,758	28	110

8. **Electrical Traction in Commonwealth, 1912-13.**—The subjoined table gives particulars of electric tramways for each State and the Commonwealth. The returns for the Hobart tramways in Tasmania, for the Ballarat and Bendigo tramways in Victoria, for the Rockdale-Brighton-le-Sands in New South Wales, for the Perth and Kalgoorlie tramways in Western Australia, and for the Brisbane tramways, are for the calendar year 1912; and for other tramways the returns are, generally, for the financial year 1912-13:—

ELECTRIC TRAMWAYS IN COMMONWEALTH, 1912-13.

State.	Mileage (Route) open for Traffic.	Capital Cost.	Current Gene- rated.	Tram Miles Run.	No. of Passen- gers Carried.	Gross Revenue.	Work- ing Ex- penses.	No. of Cars, Motors, and Trail'rs	No. of Em- ployees
	Miles.	£	Kilowatt- hours (.000 omitted).	No. (.000 omitted).	No. (.000 omitted).	£	£	No.	No.
N.S.W. ...	142½	6,175,463	80,904	25,513	275,980	1,619,186	1,436,605	1,220	9,056
Victoria ...	56	*544,467	4,569	3,210	20,305	*128,586	*91,314	168	625
Queensland ...	34	†	5,799	3,508	36,376	243,668	165,014	129	762
South Australia	49½	1,350,710	9,169	5,141	41,576	310,241	207,319	170	1,113
West. Australia	52½	1,042,474	4,535	2,527	16,947	172,474	103,927	107	431
Tasmania ...	16	162,992	1,406	821	5,991	53,536	34,090	45	161
Commonwealth	350½	9,276,106 ‡	106,382	40,720	397,175	2,527,691 ‡	2,038,269 ‡	1,839	12,148

* Exclusive of North Melbourne Tramway. † Not available. ‡ Incomplete.

SECTION XVIII.

POSTS, TELEGRAPHS, AND TELEPHONES.

§ 1. Posts.

1. **The Commonwealth Postal Department.**—Under the provisions of section 51 of the Commonwealth Constitution Act the Commonwealth Parliament was empowered to make laws with respect to the control of the postal, telegraphic, and telephonic services in Australia, and by proclamation, made under section 69 of the same Act, the six separate State Post and Telegraph Departments were amalgamated and taken over by the Federal Executive on the 1st March, 1901. On the 1st December following, the Commonwealth Post and Telegraph Act 1901 came into operation, and the provisions of the various State Acts referring to the postal and telegraphic services thereby ceased to apply; it was, however, specially provided by the Act of 1901 that, until such provisions should be revoked by the Governor-General, all regulations in force, and all rates and charges levied under any State Act, should continue in force and be applied in the same manner as if such State Act were not affected by the Commonwealth Act. The administration of the Act of 1901 was placed in the hands of a Postmaster-General, a responsible Minister with Cabinet rank, and of a Secretary having chief control of the Department throughout the Commonwealth under the Postmaster-General, whilst a principal officer in each State was provided for under the style of Deputy Postmaster-General. The rates and charges levied in each State for the transmission of letters, telegrams, and postal articles at the date of Federation remained in force until the Post and Telegraph Rates Act came into operation on the 1st November, 1902. This Act secured uniformity throughout the Commonwealth in the rates charged for the conveyance of newspapers by post, and for the transmission of telegrams, but did not alter the charges made in the individual States for the transmission of letters, cards, parcels, and packets. Uniform postage rates now exist in all the States under the Postal Rates Act of 1910, which came into operation by proclamation on the 1st May, 1911. (See paragraph 6 hereof.)

In previous issues of the Year Book will be found a brief description of the postal services in the earlier period of Australian history. (See Year Book No. 5, page 754.)

2. **Development of Postal Services.**—In 1841 the number of post offices open in Australia was 102, situated mainly in New South Wales and Tasmania. At the end of ten years 101 post offices were open in New South Wales, 44 in Victoria, 72 in South Australia, and 51 in Tasmania. From the year 1851 onwards a remarkable increase in the number of post offices in Australia took place, until, in 1891, the number open on the mainland and Tasmania totalled 4463, of which 1384 were situated in New South Wales, 1729 in Victoria, 307 in Queensland, 629 in South Australia, 86 in Western Australia, and 328 in Tasmania.

On the 31st December, 1912, the postal business had increased to such an extent that 5772 post offices were open for business, of which number 2000 were situated in New South Wales, 1730 in Victoria, 593 in Queensland, 663 in South Australia, 390 in Western Australia, and 391 in Tasmania.

3. **State, Interstate and Oversea Postages for whole Commonwealth.**—In the following table the matter dealt with is divided into (i.) matter posted in the Commonwealth for delivery within the Commonwealth, (ii.) matter received from places outside the Commonwealth, (iii.) matter despatched to places outside the Commonwealth, and (iv.) total postal matter dealt with by the Commonwealth Postal Department in 1901 and from 1908 to 1912, but excluding Interstate Excess.

**STATE, INTERSTATE, AND OVERSEA POSTAGES FOR WHOLE COMMONWEALTH,
1901 and 1908-12.**

Year.	Letters and Postcards.	Newspapers.	Packets.	Parcels.
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POSTED FOR DELIVERY WITHIN THE COMMONWEALTH (,000 OMITTED).

1901	...	210,205	92,383	36,395	1,253
1908	...	329,013	96,359	68,569	2,508
1909	...	347,594	107,516	76,348	2,741
1910	...	363,893	118,674	76,991	2,956
1911	...	416,353	122,020	70,975	3,205
1912	...	431,996	122,373	60,489	3,582

OVERSEA RECEIVED (,000 OMITTED).

1901	...	5,682	7,283	2,876	81
1908	...	13,309*	8,141	4,429	107
1909	...	14,092	9,145	3,620	106
1910	...	15,729	10,042	3,852	119
1911	...	19,445	11,691	4,568	142
1912	...	24,266	18,840		196

OVERSEA DESPATCHED (,000 OMITTED).

1901	...	4,945	3,055	1,319	35
1908	...	10,624	5,400	2,191	68
1909	...	11,279	5,712	2,406	70
1910	...	13,039	6,003	3,076	79
1911	...	17,265	7,926	3,120	83
1912	...	24,146	9,364	3,357	89

**TOTAL POSTAL MATTER DEALT WITH BY THE COMMONWEALTH POSTAL
DEPARTMENT 1901 AND 1908-12, BUT EXCLUDING INTERSTATE EXCESS
(,000 OMITTED).**

1901	...	220,853	102,727	40,161	1,369
1908	...	356,176	110,269	76,041	2,680
1909	...	372,496	119,931	81,909	2,898
1910	...	392,851	132,415	83,599	3,155
1911	...	453,885	139,603	79,017	3,419
1912	...	479,673	138,170	70,609	3,864

* The increase is partly due to the fact that in New South Wales the method of counting was different in previous years.

4. **State, Interstate and Oversea Postages for each State.**—The following table shews separately for each State the postage matter dealt with in 1912 under the same classification adopted in the preceding paragraph :—

STATE, INTERSTATE, AND OVERSEA POSTAGE FOR EACH STATE, 1912.

State.	Letters and Postcards.	Newspapers.	Packets.	Parcels.
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POSTED FOR DELIVERY WITHIN COMMONWEALTH (,000 OMITTED).

New South Wales ...	155,024	54,505	26,657	1,828
Victoria ...	143,794	24,829	15,663	605
Queensland ...	49,088	18,941	8,683	689
South Australia ...	35,275	7,848	2,941	221
Western Australia ...	26,981	7,141	4,692	177
Tasmania ...	21,833	9,108	1,804	62
Commonwealth...	481,995	122,372	60,440	3,582

OVERSEA RECEIVED (,000 OMITTED).

New South Wales ...	10,243	3,580	1,500	65
Victoria ...	8,696	*6,794	†	47
Queensland ...	1,897	2,205	715	43
South Australia ...	1,035	926	449	15
Western Australia ...	1,705	882	458	20
Tasmania ...	691	876	455	6
Commonwealth...	24,267	15,263	3,577	196

OVERSEA DESPATCHED (,000 OMITTED).

New South Wales ...	10,145	5,011	1,529	42
Victoria ...	6,692	3,154	1,401	21
Queensland ...	2,088	467	161	10
South Australia ...	1,438	229	146	6
Western Australia ...	2,408	312	73	8
Tasmania ...	1,375	190	47	2
Commonwealth...	24,146	9,363	3,357	89

* Including packets. † Included with newspapers.

5. **Postal Facilities.**—The subjoined statement shews the number of post and receiving offices, the area in square miles and the number of inhabitants to each post office (including receiving offices) in each State and in the Commonwealth at the end of the year 1912. It will be observed that the most sparsely populated States have the greatest number of offices in comparison with their population, but in order to judge the relative extension of postal facilities the area of country to each office must also be taken into account. The returns given for South Australia in this and all succeeding tables include those for the Northern Territory. Similarly, the returns for the Federal Territory are included in those for New South Wales.

**SQUARE MILES OF TERRITORY AND NUMBER OF INHABITANTS TO EACH POST
AND RECEIVING OFFICE, 1912.**

State.	[*] N.S.W.	Vic.	Q'land.	[†] S.A.	W.A.	Tas.	C'wlth.
Number of post and receiving offices...	2,559	2,574	1,363	763	520	446	8,225
Number of square miles of territory to each post office in State ...	121	34	492	1,184	1,876	59	362
Number of inhabitants to each office...	707	540	481	573	603	436	584
Number of inhabitants per 100 sq. miles	583	1,582	97	48	32	742	161

* Including Federal Territory.

† Including Northern Territory.

6. Rates of Postage.—Prior to the operation of the Postal Rates Act of 1910, the charges made for the postage of newspapers and parcels, and of interstate and foreign letters, were the same in all the States of the Commonwealth. The rates for the transmission of inland letters, however, were not uniform, the Post and Telegraph Act 1901 having specially provided that the rates and charges levied in any State should continue in force. The last-mentioned regulation, however, was repealed by the Postal Rates Act of 1910, which came into force by proclamation on 1st May, 1911.

The following rates on letters, newspapers, and certain other postal articles posted in the Commonwealth for delivery therein came into force on the 1st May, 1911, the date of proclamation of the operation of the Postal Rates Act of 1910 :—

**POSTAL RATES OF CERTAIN ARTICLES POSTED IN THE COMMONWEALTH FOR
DELIVERY THEREIN ON AND AFTER 1st MAY, 1911.**

Postal Articles.	Rates of Postage.
LETTERS	1d. per $\frac{1}{2}$ ounce.
LETTER-CARDS	{ Single, 1d. each.
	{ Reply, 1d. each half.
POST CARDS	{ Single, 1d. each.
	{ Reply, 1d. each half.
PRINTED PAPERS AS PRESCRIBED	$\frac{1}{2}$ d. per 2 ounces or part of 2 ounces.
BOOKS PRINTED OUTSIDE AUSTRALIA	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
BOOKS PRINTED IN AUSTRALIA	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
MAGAZINES.—That is to say—	
(a) magazines, reviews, serials, and other similar publications printed and published in Australia in numbers at intervals not exceeding three months	$\frac{1}{2}$ d. per 8 ounces or part of 8 ounces.
(b) magazines, reviews, serials, and other similar publications (including newspapers) printed and published outside Australia in numbers at intervals not exceeding three months	$\frac{1}{2}$ d. per 4 ounces or part of 4 ounces.
HANSARD.—That is, reports of Parliamentary Debates printed and published by the authority of the Commonwealth or of a State	$\frac{1}{2}$ d. per 12 ounces or part of 12 ounces.
COMMERCIAL PAPERS, PATTERNS, SAMPLES, AND MERCHANDISE AS PRESCRIBED	1d. per 2 ounces or part of 2 ounces.
NEWSPAPERS (without condition as to the number contained in each addressed wrapper) posted by registered newspaper proprietors, or by newsvendors, or returned by an agent or newsvendor to the publishing office	1d. per 20 ounces on the aggregate weight of newspapers so posted by any one person at any one time.
ALL OTHER NEWSPAPERS	For each newspaper, $\frac{1}{2}$ d. per 10 ounces or part of 10 ounces.

Whilst the bookkeeping sections of the Constitution Act (see Section XIX., § 1, hereinafter) were in force, each State had necessarily to use its own postage stamps, and stamps sold in one State were only allowed to be used on letters posted in that State. The necessity for this arrangement disappeared with the change in the keeping of the Commonwealth accounts, and since the 14th October, 1910, stamps of any State can be affixed to letters, irrespective of the State in which they are posted. Stamps with a uniform design containing characteristic features of Australia are now used throughout the Commonwealth:

(i.) *Letters.* Under the Postal Rates Act of 1910, the charge (1d. for every $\frac{1}{2}$ -oz.) for letters posted for delivery within the Commonwealth is now uniform throughout all States. Previous to the 1st May, 1911, various local and interstate rates were in operation within the States. The postage to the United Kingdom was reduced in January, 1891, from sixpence per half-ounce *via* the Red Sea, and fourpence *via* the Cape of Good Hope, to the uniform rate of twopence halfpenny. In 1891 the States were represented at the Congress of the Universal Postal Union held in Vienna, and on the 4th July a convention was signed on their behalf, by which they joined the Union from the 1st October of that year. On that date the rate of postage to all British possessions and to foreign countries included in the Union was reduced to twopence halfpenny. The present charge for postage of interstate letters and of letters to the United Kingdom and to British possessions is now uniformly one penny per half-ounce throughout the Commonwealth; the rate on letters to foreign countries (with the exception of New Hebrides, Banks and Torres Islands, where the rate is a penny per half-ounce) is twopence halfpenny for each half-ounce.

(ii.) *Newspapers.* The different rates charged for the carriage of newspapers in the various States, prior to Federation, continued after the control of the Postal Departments had been taken over by the Commonwealth, until the 1st November, 1902, when a uniform rate was imposed by the Post and Telegraph Rates Act 1902. At present the rates on all newspapers posted for delivery in the Commonwealth (without condition as to the number contained in each addressed wrapper posted) by registered newspaper proprietors, or by newsvendors, or returned by newsvendor or agent to the publishing office, is one penny per twenty ounces on the aggregate weight. On all other registered newspapers posted within the Commonwealth for delivery therein the charge is a halfpenny per ten ounces for each newspaper. At the end of the year 1911 there were in all 1784 publications registered in the Commonwealth under section 29 of the Post and Telegraph Act 1901 for transmission by post as newspapers. The charge on postage of registered newspapers for transmission to the United Kingdom is one penny for each newspaper not exceeding eight ounces in weight by the ordinary route, and one penny for each newspaper not exceeding sixteen ounces in weight by the All-Sea route. To other parts of the world the rate is one penny up to four ounces, and a halfpenny for every additional two ounces. Newspapers which are not registered are charged at the same rates as other printed papers.

(iii.) *Parcels.* Parcels may not exceed 11 lbs. in weight, 3 ft. 6 in. in length, or 6 ft. in length and girth combined. The rate for the inland postage of parcels is sixpence up to 1 lb., and then threepence for every additional pound. For interstate transmission the rate is eightpence up to 1 lb., and then sixpence per lb., and for transmission to the United Kingdom the rate is one shilling up to 1 lb., and sixpence for every additional pound.

(iv.) *Packets.* The regulations for the conveyance of packets vary in the several States. The ordinary rate is one penny for each two ounces. Packets must not as a rule exceed 2 ft. in length, 1 ft. in breadth or depth; or, if in a roll, 2 ft. 6 in. in length. Special rates are allowed for the conveyance of commercial papers, patterns, samples, etc.

7. Registered Letters.—Under section 38' of the Post and Telegraph Act 1901 provision is made for the registration of any letter, packet, or newspaper upon payment of the prescribed fee, and any person who sends a registered article by post may obtain an acknowledgment of its due receipt by the person to whom it is addressed by paying the prescribed fee (see hereunder) in advance at the time of registration in addition to the registration fee.

(i.) *Registration Fees.* The fee payable upon registration of an article is threepence, and the fee payable in order to obtain an acknowledgment of the delivery of the registered article is twopence halfpenny in addition. Registered letters must, as a rule, be handed in at least half-an-hour before the closing of the mails.

(ii.) *Number of Registered Articles Posted.* The subjoined table shews the number of registered articles posted in each State during the year 1912, classified according to the places to which they were despatched for delivery:—

NUMBER OF REGISTERED ARTICLES POSTED DURING 1912.

(,000 OMITTED.)

State.	Posted in each State for Delivery within that State.	Posted in each State for Delivery in other States.	Posted in each State for Delivery in Places outside the C'wealth.	Total.
New South Wales ...	1,166	140	110	1,416
Victoria ...	875	120	88	1,083
Queensland ...	473	55	39	567
South Australia ...	201	37	26	264
Western Australia ...	389	32	38	459
Tasmania ...	185	28	7	220
Commonwealth ...	3,289	412	308	4,009

8. Ocean Mail Services.—Regular steamship communication between Australia and Europe was established in 1852 by a service run by the Peninsular and Oriental Company between Singapore and Sydney, *via* King George's Sound, Adelaide, and Melbourne. This service was inaugurated in September, 1852, by the arrival at Melbourne of the "Chusan," and was continued until 1854, when it was stopped in consequence of the Crimean War; in 1856 a line of steamers was again started, and the service was carried on by the Peninsular and Oriental Company, in conjunction with the Royal Mail Company, for some years.

(i.) *Mail Route via San Francisco.* The service *via* the Red Sea did not at that time give much satisfaction to the public, and was looked upon with a certain amount of disfavour in New South Wales and New Zealand. The effect was to stimulate the colonists to agitate for an improved service, and proposals were made for the establishment of a line of mail packets from Sydney to Panama *via* Wellington, by rail across the isthmus, and thence to Great Britain. The result was that in 1866 the line was started, and continued in operation until the end of 1868, when it was terminated through the failure of the company by which it had been carried out. The completion of the railway across the American continent in 1869, with its western terminus at San Francisco, opened up a new and agreeable route, and in that year a monthly service was inaugurated by the Union Steamship Company, in conjunction with the Pacific Steamship Company, from Sydney to San Francisco *via* Auckland. This service was subsidised to the extent of £37,000 per annum, of which New South Wales paid £25,750 and New Zealand £11,250, and was continued until November, 1890, when a new contract was entered into and the amount of the subsidy largely reduced, the amount of the contribution being based upon the weight of mail matter carried. Various extensions of

the contract were made, but the last agreement made between the New Zealand Government and the Oceanic Steamship Company of San Francisco expired on the 10th November, 1906, and has not since been renewed. From that date mails were carried at Postal Union rates until the 12th April, 1907, when the service was discontinued. At present mails to and from Europe *via* San Francisco are carried by the Union Steamship Company, which receives a subsidy from the New Zealand Government, and by the Oceanic Company. Each of these companies carries Australian mails at poundage rates, with a four-weekly service.

(ii.) *Route via Suez Canal.* The establishment of a mail route *via* America had the effect of stimulating the steamship owners who were engaged in the service *via* Suez, and from that time there was a marked improvement in the steamers, as well as in the punctuality and speed with which the mails were delivered. The Peninsular and Oriental Company, and, at a little later date, the Orient-Pacific Company, have carried mails to and from Australia almost since the inception of ocean steam services. Postal matter was carried by contract until 1905, when the contract between the Peninsular and Oriental Company and the Commonwealth Government ceased, although that between the company and the Imperial Post Office is still in force. Mails are still carried from Australia by the Peninsular and Oriental Company, but are carried at Postal Union rates and not under contract with the Commonwealth. On the 25th April, 1905, the Orient-Pacific Company concluded a new contract with the Commonwealth Government for a fortnightly service between England and Australia. The subsidy was at the rate of £124,880 per annum. This contract has now been replaced by the new mail contract referred to in the next sub-section hereof. Fremantle has, since the year 1900, been the first and last port of call for the mail steamers to Europe, in lieu of Albany, the original port of call. The Peninsular and Oriental and Orient-Pacific Companies' steamers sail alternately every week both from London and Australia, conveying the outward and homeward mails.

(a) *The New Mail Contract.* On the 1st January, 1906, tenders were invited by the Commonwealth Postmaster-General for a fortnightly mail service between Adelaide and Brindisi, to alternate with a similar service to be provided by the Imperial Government, and a contract was entered into with Sir James Laing and Company Limited, providing for a service at an annual subsidy of £125,000. This contract, however, fell through, and new tenders were accordingly called for. On the 15th November, 1907, an agreement was entered into with the Orient Steam Navigation Company Limited providing for a fortnightly service for a period of ten years, commencing in February, 1910. The mail service is to be carried out by existing vessels belonging to the company and by five new mail ships, which have been specially built, and which are each over 12,000 tons gross registered tonnage and of not less than seventeen knots speed. Two more new vessels were to be added within eighteen months and six years respectively from February, 1910, and under this provision the *Orama* entered into running during November, 1911. The vessels are to call at Fremantle, Adelaide, Melbourne, Sydney, and Brisbane, and at least six of them at Hobart during the months of February to May inclusive. The voyage from Taranto to Adelaide is to be completed within twenty-six days fourteen hours, and from Adelaide to Taranto within twenty-seven days two hours, but the latter period may be exceeded by thirty-six hours during the prevalence of the south-west monsoon. The amount of the subsidy is fixed at £170,000 per annum; but, if the earnings of the company be decreased, or the expenses increased, by reason of any Commonwealth shipping legislation passed subsequently to the date of the agreement, to the extent of not less than £5000 a year, the contractors have the right to terminate the agreement unless the subsidy is increased. Insulated space of not less than 2000 tons of forty cubic feet is to be provided in each of the new vessels, and the freights are not to exceed one halfpenny per lb. for butter and sixty shillings per ton for fruit. White labour only is to be employed, and no discrimination is to be made between unionists and non-unionists. If before or during the sixth year of the period of the contract an accelerated service is provided by any competing line of mail ships, the

contractors must, if so required by the Postmaster-General, provide a service equal to the competing service, at an increased subsidy, to be determined by agreement or arbitration. The Commonwealth flag must be flown on the mail ships, which the Commonwealth has the right to purchase at a valuation at any time. Within six months of the Postmaster-General establishing a permanent wireless telegraphy station at Rottnest Island, or at any point on the coast between Fremantle and Brisbane, the company must fit the mail ships with wireless telegraphy installations. The new service was inaugurated on the 11th February, 1910.

(b) *French and German Subsidised Mail Services.* Vessels belonging to the Messageries Maritimes and the Norddeutscher Lloyd, which are under contract respectively with the French and German Governments to convey mails monthly between Marseilles and New Caledonia and between Bremen and Sydney, *via* Genoa, also carry mails for the Commonwealth Government from Australia to Europe at Postal Union rates. The Messageries Maritimes service commenced in November, 1882; the amount of the annual subsidy granted by the French Government is £120,000. The first contract for the establishment and maintenance of a mail steamship line between Germany and Australia was made between the Imperial German Government and the Norddeutscher Lloyd in 1885, and the service was inaugurated in July, 1886, with the steamer *Salier*.

(iii.) *Route via Vancouver and Canadian Pacific Railway.* During the year 1893 a direct monthly service was started between Sydney and Vancouver, in British Columbia, *via* Wellington, in New Zealand, and thence to Liverpool *via* the Canadian-Pacific Railway, the New South Wales Government paying an annual subsidy of £10,000 for the maintenance of this service for a period of three years. In 1896 the agreement was renewed for a further period of three years, and in 1899, was again renewed for four years, subject to the same terms and conditions, except that the route was *via* Brisbane instead of Wellington. The contract was further extended, at an increased subsidy, from time to time until the 31st July, 1911, at a subsidy of £26,626 per annum. This subsidised service has now been discontinued. Mails for Canada are forwarded *via* New Zealand through Sydney at poundage rates.

(iv.) *Other Ocean Mail Services.* In addition to the mails *via* the Suez Canal, a number of other services, both regular and irregular, are maintained between the Commonwealth and various parts of the world, and also between the principal ports in the various States and a number of small ports in the less settled parts of the Commonwealth which are inaccessible by rail. The following statement gives a summary, in so far as returns are available, of all mail services maintained between the Commonwealth and other countries and between ports in the Commonwealth. The amounts of subsidies specified are the amounts payable per annum unless otherwise stated.

SUMMARY OF MAIL SERVICES, COMMONWEALTH OF AUSTRALIA, 30th JUNE, 1913.

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
1. <i>To and from Europe, via Suez—</i>			
(a) Peninsular and Oriental* ...	Fortnightly	Adelaide, Fremantle and London, <i>via</i> Brindisi and Marseilles	Subsidised by Imperial Govt. Mails from Aust. at Postal Union rates
(b) Orient-Pacific* ...	"	Adelaide, Fremantle & London, <i>via</i> Taranto	Subsidised. Date of agreement, 15th Nov., 1907. Term, from Feb., 1910. Amt. of subsidy £170,000.
(c) Messageries Maritimes ...	Every four weeks	New Caledonia and Marseilles, <i>via</i> Fremantle and Adelaide	Subsidised by French Govt. Mails from Aust. at Postal Union rates.
(d) Norddeutscher Lloyd ...	13 voyages yearly.	Fremantle, Adelaide & Bremen, <i>via</i> Genoa	Subsidised by German Govt. Mails from Aust. at Postal Union rates.

* Mails carried also to India *via* Colombo.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
2. <i>To and from Europe, via Vancouver†—</i> Union Steamship Co. ...	Every four weeks	Sydney and Vancouver, B.C., via Auckland, Fiji, Honolulu, and once every eight weeks to Fanning Island	Poundage rates.
3. <i>To and from Europe, via San Francisco—</i> (a) Union Steamship Company ...	"	Sydney, Wellington and San Francisco	Subsidised by New Zealand Govt. Mails from Aust. at Poundage rates.
(b) Oceanic Steamship Co. ...	"	Sydney, Apia, Honolulu, and San Francisco	Poundage rates.
4. <i>To and from New Zealand—</i> (a) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Weekly	Sydney, Melbourne, Hobart, Bluff, Dunedin, Christchurch and Wellington	Poundage rates.
(b) Conjointly by Shaw, Savill and Albion Co. & N.Z. Shipping Co.	Fortnightly	Hobart, Bluff, Dunedin, and Wellington	" "
(c) Conjointly by Union S.S. Co. and Huddart, Parker Ltd.	Bi-weekly	Sydney and Wellington, Sydney and Auckland	" "
(d) Other Steamers ...	Irregularly, when convenient	Sydney, Wellington, Auckland, and Lyttelton	" "
5. <i>To and from ports in N.S. Wales—</i> (i.) NORTHERN PORTS— (a) North Coast S.N. Co. ...	Weekly	Sydney, Manning River, Macleay, Nambucca, Bellinger Rivers.	" "
	Twice weekly	Coffs Harbour, Clarence River, Byron Bay, and Richmond River	" "
(b) Cain's Co-Operative S.S. Co....	Six times a month	Sydney & Port Macquarie	" "
(ii.) SOUTH COAST PORTS— Illawarra and S. Coast S.N. Co....	Twice weekly	Sydney, Eden, Bega and Tathra	" "
6. <i>To and from Northern Ports of Qld.—</i> (a) Australian United Steam Navigation Co. Ltd.	Weekly	Brisbane, Gladstone, Townsville, Cairns, Cardwell, Mourilyan, Geraldton, Pt. Douglas and Cooktown	Subsidised by agreement dated 29th Nov., 1905, for five years; extended to 29th November, 1914. Amount of subsidy, £18,450.
(b) Do. do. do	Once every three weeks	Brisbane, Normanton & Burketown, via Townsville, Cooktown, and Thursday Island	Subsidised by agreement dated 16th Jan., 1906, for five years, extended for four years to Jan., 1915. Amount of subsidy, £6000. Subsidies under 6 (a) and (b) paid by Queensland.
(c) Other steamers ...	Irregularly, when convenient	Various...	Poundage rates
7. <i>To and from Ports in S. Australia—</i> (a) Gulf Steamship Co. ...	Weekly	Pt. Adelaide & Kingscote	Subsidised to 31st December, 1913. Amount of subsidy, (a) £595; (b) £299; (c) £299; (d) £149.
(b) " " "	Twice a wk.	" Edithburgh	Subsidised for three years from 1st January, 1911. Amount of subsidy, £1730.
(c) " " "	"	" Stansbury	Subsidised without agreement. Amount of subsidy, £96. Subsidies under 7 (i.) (a), (b), (c), (d), (e), (f), paid by South Australia.
(d) " " "	Weekly	" Pt. Vincent	
(e) Adelaide Steamship Co. ...	"	" Pt. Lincoln	
(f) Adelaide Steam Tug Co. ...	As required	Port Pirie & Hummocks Hill	
8. <i>Western Australia—</i> (i) INTERSTATE— (a) By P. & O. and Orient Lines	Weekly	Fremantle and Adelaide	P. and O. at Postal Union rates. Orient line subsidised. See above 1 (a) and (b).
(b) Adelaide Steamship, the Australian United S. Navigation, Huddart, Parker, Howard Smith, Melb. S.S. Co., and McIlwraith McEachern lines	Conjointly, weekly	Fremantle, Albany, and Adelaide	Poundage rates.

† Carries also mails to Canada and the United States.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
<i>Western Australia—continued—</i>			
(c) Messageries Maritimes, Nord-deutscher Lloyd, and the German and Ausn. lines	Every four weeks	Fremantle and Adelaide	Postal Union rates by first two, and poundage rates by last line. Poundage rates.
(d) White Star line	Monthly	Albany and Adelaide	
(ii.) To & FROM PORTS ON N.W. COAST			
(a) State Steamship Service ...	"	Fremantle and Derby	Subsidised by agreement dated 28th February, 1913, for three years. Amount of subsidy, £5500. Subsidy paid by Western Australia. Poundage rates.
(b) " " ...	Once each sixty days	Fremantle & Darwin	
(c) West Aust. & Ocean S. Co.'s	Fortnightly	Fremantle and Broome	
(d) Ausn. United S. Navigation and Adelaide S. Co.'s	Irregularly during the cattle season	Fremantle, Derby, and Wyndham	
(iii.) To AND FROM PORTS ON S. COAST			
(a) State Steamship Service ...	Weekly	Albany and Esperance	Subsidised by agreement dated 26th August, 1912, for three years. Amount of subsidy, £3250.
(b) " " " ...	Fortnightly	Albany & Israelite Bay	
(c) " " " ...	Quarterly	Albany and Eucla	
9. <i>Tasmania—</i>			
(a) Union S.S. Co. and Huddart, Parker Proprietary	Three times a week	Melb'rne & Launceston	Subsidised by agreement dated 1st October, 1912, for two years. Amount of subsidy, £13,000.
(b) Do. do. do. ...	Twice a wk.	" Burnie	
(c) Do. do. do. ...	Weekly	Sydney, Hobart, and Wellington	Poundage rates.
(d) Union Steamship Co. ...	Fortnightly	Sydney, Eden, Launceston, and Devonport	
(e) New Zealand mail services, see above New Zealand, 3 (a) & (b)	Twice a wk.	Sydney, Melb'ne, Hobart, Bluff, Dunedin, Christchurch, Wellington and Auckland	" "
(f) To and from ports in Western districts	Weekly	Hobart and Strahan	
(g) Ellerker and Co. ...	"	Melbourne, Burnie, etc.	Subsidised by agreement dated 1st January, 1913, for three years. Amount of subsidy £255 per annum.
(h) Huon Channel and Peninsula Steamship Co. Ltd.	Twice a wk.	Hobart and Tasman Peninsula Ports	
(i) Holyman and Sons Ltd. ...	"	Hobart & Maria Island	Subsidised by agreement dated 1st January, 1913, for three years. Amount of subsidy £25 per annum.
(j) " " ...	Thrice weekly	Launceston and Furneaux group of Islands	
(k) Stephenson & Gunn ...	"	Launceston and King Island	Subsidised by agreement dated 1st January, 1913, for one year. Amount of subsidy £300 per annum.
10. <i>To and from Northern Territory—</i>			
(a) The Eastern and Ausn., and the China Navigation Co.'s	Irregularly	{ To and from Adelaide, Melb'rne, and Sydney, via North Queensland ports, extending to China and Japan	Poundage rates.
(b) Burns, Philp and Co. ...	Monthly		Postal Union rates.
(c) Royal Dutch Packet S.N. Co.	Every two months	Melbourne to Darwin, via North Queensland ports en route to Java	Poundage rates
(d) Jolly and Co. ...	Four times a year	Darwin and Boroloola, calling half-yearly at Roper River	Subsidised by agreement till 30th June, 1913. Amount of subsidy, (d) £1540; (e) £150 per voyage.
(e) " " ...	Every eight weeks	Darwin and Wyndham	
(f) State Steamship Service of Western Australia	Every two months	Fremantle and Darwin	Subsidised by Western Australian Government.

SUMMARY OF MAIL SERVICES.—(Continued.)

Description of Service.	Frequency of Service.	Ports between which Service is maintained.	Particulars regarding Subsidies.
11. To Eastern Ports—			
(a) Burns, Philp & Co. ...	Monthly	Sydney, Sourabaya, Samarang, Batavia, and Singapore	Subsidised by N.S.W. Govt. Mails at poundage rates.
(b) China Navigation, Eastern & Ausn., and Burns, Philp Co.'s	About three times a month	Sydney, to Hong Kong, Manila, etc., via North Queensland ports	Poundage rates.
(c) Norddeutscher Lloyd ...	Monthly	Via Germ'n New Guinea, Bismarck Archipelago, and Hongkong	Postal Union rates.
(d) Nippon Yusen Kaisha ...	"	Sydney to Manila, China, and Japan, via N. Queensland ports	" "
(e) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Java, via Sydney and Queensland ports	Poundage rates.
(f) Various other steamers ...	About monthly	Sydney or Newcastle and ports in Borneo, Java, Sumatra, and Malay Peninsula	" "
(g) W.A.S.N. Co. & Ocean S.S. Co.	Fortnightly	W.A. Ports, Java, and Singapore	" "
12. South Africa—			
White Star, Lund's, and other Companies	Irregularly	Various	" "
13. North America—			
(a) Weir line ...	"	Sydney, San Francisco, and Vancouver	Poundage rates.
(b) Various steamers ...	"	Sydney or Newcastle to San Francisco	" "
(c) Various steamers ...	"	Sydney to Guaymas (Mexico)	" "
(d) Union S.S. Co. ...	13 voyages yearly	Syd., Wellington, Tahiti and San Francisco	" "
(e) " " ...	Every four weeks	Sydney, Auckland, Fiji and Vancouver	" "
14. South America—			
Various steamers ...	About weekly	Sydney or Newcastle via N. Zealand to ports in Chile, Brazil, Peru, Uruguay, and Argentine	Poundage rates.
15. Pacific Islands—			
(a) Burns, Philp and Co. ...	Monthly	Sydney to Lord Howe & Norfolk Islands, N. Hebrides	Subsidised by Commonwealth at £19,850 per annum.
(b) " " ...	Every two months	Sydney to Gilbert and Marshall Islands	
(c) " " ...	Every six weeks	Papua	
(d) " " ...	"	Solomon Islands	
(e) Royal Dutch Packet S. N. Co.	Monthly	Melbourne to Papua via Sydney and Queensland ports	Poundage rates.
(f) German S.S. Co. ...	Every 4 months	"	Subsidised by German Gov.
16. Noumea—			
(a) Messageries Maritimes ...	Fortnightly	Sydney and Noumea and to Vila (New Hebrides) once a month	Postal Union rates.
(b) Other steamers ...	About fortnightly	Sydney and Noumea	Poundage rates.
17. Fiji—			
(a) Union S.S. Co. ...	Monthly	Sydney and Suva	" "
(b) " " ...	"	Sydney, Auckland, Suva, Tonga, and Samoa	" "
18. Fiji and Noumea—			
Burns, Philp and Co. ...	"	Sydney and Suva	" "
19. Ocean and Pleasant Islands—			
Various steamships ...	"	Sydney, Ocean and Pleasant Islands	" "

9. **Amount of Mail Subsidies Paid.**—The following table shews the amounts of subsidies for ocean and coastal mail services as existing on 31st December, 1913, which are paid by the Commonwealth Postal Department.

MAIL SUBSIDIES.—OCEAN AND COASTAL SUBSIDIES, 1913.

Service...	Orient Pacific.	Queensl'd Ports.	South Australian Ports.	Western Australian Ports.	Tasmanian Ports.
Annual Subsidy	£ 170,000	£ 24,450	£ 5,512	£ 8,750	£ 14,125

During the year 1912 the amount paid by the Commonwealth for conveyance of mails at poundage rates by non-contract vessels was £28,906; by road services, £353,714; and by railway services, £331,691.

10. **Average and Fastest Time of Mails to and from London.**—Great progress has been made in regard to the means of postal communication with the United Kingdom and the continents of Europe and America. In 1857 there was an unsatisfactory ocean mail service, which nominally brought monthly mails, with news nearly sixty days old; at the present time, though but fifty years have elapsed, there are four lines of modern ocean steamships, which bring the mails in about twenty-nine days to Adelaide, in addition to services by way of New Zealand, *via* San Francisco and Vancouver. After leaving Fremantle, where the Western Australian mails are landed, the outward mail steamers *via* the Suez Canal all call at Adelaide, where the remaining mails are landed and conveyed to their ultimate destination by rail. The subjoined table shews the average and the fastest times occupied in the conveyance of mails from London to Adelaide and *vice versa* during the year 1912:—

AVERAGE AND FASTEST TIME OCCUPIED IN CONVEYANCE OF MAILS VIA SUEZ CANAL BETWEEN LONDON AND ADELAIDE, AND VICE VERSA, DURING 1912.

Service.	London to Adelaide.				Adelaide to London.			
	Average Time.		Fastest Time.		Average Time.		Fastest Time.	
	Days.	Hours.	Days.	Hours.	Days.	Hours.	Days.	Hours.
Peninsular and Oriental S.N. Co., <i>via</i> Brindisi ...	28	6	27	23	29	16	29	7
Orient Pacific S. N. Co., <i>via</i> Naples ...	28	10	27	11	30	0	28	17½

The journey by rail from Adelaide, where the mails for the eastern States are landed, to Melbourne takes 17½ hours; from Adelaide to Sydney, 42 hours, including a stop of about seven hours at Melbourne; while the through journey from Adelaide to Brisbane takes just over three days. The journey from Melbourne to Hobart occupies about 29 hours, *via* Launceston, and about 32 hours direct.

The average time occupied in the conveyance of mails from London to Sydney *via* Vancouver is a little over 37 days, and from Sydney to London by the same route nearly 35. A table shewing the average and fastest times of this service was given in previous issues (see Year Book No. 5, p. 766), but the discontinuance of the contract with the company operating between Australia and Vancouver renders the table no longer desirable.

11. **Money Orders and Postal Notes.**—The issue of money orders and postal notes in the Commonwealth is regulated by sections 74 to 79 of the Post and Telegraph Act 1901. A money order, which may be issued for payment either within the Commonwealth or abroad, may not be granted for a larger sum than £20, nor a postal note, which is payable only within the Commonwealth, for a larger sum than twenty shillings. Money orders are sent direct from the Commonwealth to the United Kingdom, and to most of the British colonies and possessions; to the German Empire and German colonies; to Italy; and to the United States of America. Money orders, payable in Japan and China, are sent *via* Hong Kong; orders payable in all other countries are sent through the General Post Office in London, where new orders are issued and forwarded to the addresses of the payees, less threepence for every £5, or part thereof. In order that the full amount of the original order may be forwarded to the payee, this extra commission must be paid by the remitter.

(i.) *Value of Orders Issued and Paid and of Notes Sold.*—The following table shews the total value of money orders issued and paid, and of postal notes sold in each State and in the Commonwealth during the year 1912, together with the total amount of commission on money orders and poundage on postal notes received by the Postal Department:—

VALUE OF MONEY ORDERS ISSUED AND PAID AND OF POSTAL NOTES SOLD, TOGETHER WITH THE TOTAL AMOUNTS OF COMMISSION AND POUNDAGE RECEIVED IN EACH STATE DURING 1912.

State.	Value of Money Orders Issued.	Value of Money Orders Paid.	Net Money Order Commission Received.	Value of Postal Notes Sold.	Poundage Received on Postal Notes
	£	£	£	£	£
New South Wales ...	3,259,012	3,190,503	26,654	1,304,166	24,906
Victoria ...	1,261,329	1,506,660	11,297	990,599	19,337
Queensland ...	1,037,951	841,776	10,594	333,817	6,613
South Australia ...	442,506	393,594	4,462	229,148	4,493
Western Australia ...	1,108,436	692,214	11,131	274,883	4,882
Tasmania ...	307,332	261,680	2,786	120,893	2,406
Commonwealth ...	7,417,066	6,886,427	66,924	3,258,506	62,637

(ii.) *Rates of Commission on Money Orders.* The rates of commission chargeable for the issue of money orders are as follows:—

RATES OF COMMISSION, MONEY ORDERS, 1913.

If Payable in—	For sums—							
	Not exceeding £2.	Exceeding £2, but not exceeding £5.	Exceeding £5, but not exceeding £7.	Exceeding £7, but not exceeding £10.	Exceeding £10, but not exceeding £12.	Exceeding £12, but not exceeding £15.	Exceeding £15, but not exceeding £17.	Exceeding £17, but not exceeding £20.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
The Commonwealth...	0 6	0 6	1 0	1 0	1 6	1 6	2 0	2 0
New Zealand and Fiji ...	0 6	1 0	1 6	2 0	2 6	3 0	3 6	4 0
Papua ...	0 9	0 9	1 6	1 6	2 3	2 3	3 0	3 0
U. Kingdom & other countries								

Sixpence for any amount up to £2 and 3d. for each additional £1 or fraction thereof.

Remittances may also be made by telegraph to and from money order offices in the Commonwealth which are also telegraph or telephone offices, and to New Zealand.

The charge for a telegraph money order is the cost of the telegram of advice in addition to the ordinary commission. The remitter must also send a telegram to the payee advising the transmission of the money, which telegram must be produced by the payee when applying for payment.

(iii.) *Rates of Poundage on Postal Notes.* The values of the notes issued have been so arranged that any sum of shillings and sixpences up to £1 can be remitted by not more than two of these notes. Broken amounts not exceeding fivepence (but not fractions of a penny) may be added by affixing postage stamps. The poundage or commission charged on notes of different denominations is as follows:—

POUNDAGE RATES, POSTAL NOTES, 1913.

Denomination of Note ...	6d. to 1s. 6d.	2s. to 4s. 6d.	5s.	7s. 6d.	10s. to 20s.
Poundage charged ...	$\frac{1}{2}$ d.	1d.	$1\frac{1}{2}$ d.	2d.	3d.

12. Number and Value of Money Orders and Postal Notes Issued and Paid.—The following table shews the total number and face value of money orders and postal notes issued and paid in the Commonwealth during 1901 and from 1908 to 1912:—

NUMBER AND VALUE OF MONEY ORDERS AND POSTAL NOTES ISSUED AND PAID, 1901 and 1908-12.

Year.	Money Orders.				Postal Notes.			
	Issued.		Paid.		Issued.		Paid.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).	No. (,000).	£ (,000).
1901 ...	1,318	4,193	1,339	4,081	3,515	1,292	3,522	1,293
1908 ...	1,437	5,733	1,402	5,725	6,319	2,391	6,322	2,389
1909 ...	1,460	6,093	1,426	6,041	6,872	2,598	6,867	2,595
1910 ...	1,500	6,368	1,424	6,259	7,446	2,796	7,446	2,796
1911 ...	1,583	6,584	1,448	6,455	8,042	3,017	8,042	3,017
1912 ...	1,822	7,417	1,557	6,886	8,533	3,235	8,533	3,235

13. Classification of Money Orders Issued and Paid.—The following table shews the number and value of money orders issued in each State during the year 1912 and classified according to the country where payable:—

MONEY ORDERS ISSUED IN EACH STATE, CLASSIFIED ACCORDING TO COUNTRY WHERE PAYABLE, 1912.

State in which Issued.	Where Payable.				Total.
	In the Com- monwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales	619,393	13,949	128,739	13,779	775,860
Victoria ...	302,030	6,693	67,161	9,628	385,512
Queensland ...	201,589	2,090	45,313	7,155	256,147
South Australia ...	86,640	1,320	28,040	5,257	121,257
Western Australia	152,378	1,450	48,266	5,619	207,713
Tasmania ...	65,309	2,068	7,119	1,356	75,852
Commonwealth	1,427,339	27,570	324,638	42,794	1,822,341

MONEY ORDERS ISSUED IN EACH STATE, Etc.—(Continued).

State in which Issued.	Where Payable.				Total.
	In the Com- monwealth.	In New Zealand.	In the United Kingdom.	In Other Countries.	
VALUE.					
	£	£	£	£	£
New South Wales	2,945,736	41,133	276,178	48,952	3,311,999
Victoria ...	1,366,184	19,902	128,501	27,648	1,542,235
Queensland	787,452	7,140	103,601	31,974	930,167
South Australia ...	373,466	4,280	55,261	17,669	450,676
Western Australia	745,286	7,199	115,163	52,182	919,830
Tasmania ...	227,834	8,137	13,454	2,734	262,159
Commonwealth	6,455,958	87,791	692,158	181,159	7,417,066

The following table shews the number and value of money orders paid in each State during the year 1912, and classified according to the country where issued :—

MONEY ORDERS PAID IN EACH STATE, CLASSIFIED ACCORDING TO THE COUNTRY OF ISSUE, 1912.

State in which paid.	Where Issued.				Total.
	In the Commonwealth.	In New Zealand.	In the United K'dom.	In Other Countries.	
NUMBER.					
New South Wales	603,675	35,394	22,951	13,828	675,848
Victoria ...	239,248	23,536	15,263	8,276	286,323
Queensland ...	222,842	2,826	8,576	3,101	237,345
South Australia ...	87,007	1,640	3,970	1,457	94,074
Western Australia	166,816	1,970	7,254	1,242	177,282
Tasmania ...	76,700	5,261	2,265	2,231	86,457
Commonwealth	1,396,288	70,627	60,279	30,135	1,557,329
VALUE.					
New South Wales	£ 2,880,089	£ 98,796	£ 97,121	£ 57,316	£ 3,133,322
Victoria... ..	1,081,254	58,559	58,440	29,166	1,227,419
Queensland ...	893,545	9,495	34,255	12,622	949,917
South Australia ...	364,313	4,908	15,432	5,713	390,366
Western Australia	842,228	5,909	26,483	4,717	879,337
Tasmania ...	281,463	12,857	6,157	5,590	306,067
Commonwealth	6,342,892	190,524	237,888	115,124	6,886,428

In the above tables money orders payable or issued in foreign countries, which have been sent from or to the Commonwealth through the General Post Office at London, are included in those payable or issued in the United Kingdom.

14. Classification of Postal Notes Paid.—The subjoined table shews the number and value of postal notes paid during the year 1912 in each State and in the Commonwealth, classified according to the State in which they were issued.

Particulars regarding the total number and value of postal notes issued and paid during previous years since the inauguration of the Commonwealth have already been given in paragraph 12 hereof.

**NUMBER AND VALUE OF POSTAL NOTES PAID, CLASSIFIED ACCORDING TO
STATE OF ISSUE, 1912.**

State in which Paid.	Postal Notes Issued in—						
	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.

NUMBER.

New South Wales	2,799,713	118,265	136,686	42,258	24,242	25,207	3,146,371
Victoria ...	196,477	2,170,031	37,115	64,694	43,837	58,021	2,570,175
Queensland ...	48,934	9,817	698,443	2,222	1,478	874	761,768
South Australia ...	38,888	25,200	2,130	472,186	13,826	1,444	553,674
Western Australia	7,525	12,756	1,183	5,646	493,414	964	521,488
Tasmania ...	311,373	344,552	23,927	41,467	8,195	249,945	979,459
Commonwealth	3,402,910	2,680,621	899,484	628,473	584,992	336,455	8,532,935

VALUE.

	£	£	£	£	£	£	£
New South Wales	1,057,439	49,768	52,512	15,818	11,358	8,613	1,195,508
Victoria ...	83,575	811,607	13,839	25,822	23,475	22,058	980,376
Queensland ...	21,102	4,152	262,749	941	837	363	290,144
South Australia ...	19,157	11,052	912	164,871	7,958	593	204,543
Western Australia	3,444	6,111	531	2,635	226,151	360	239,232
Tasmania ...	95,874	110,906	9,392	15,216	4,063	89,636	325,087
Commonwealth	1,280,591	993,596	339,935	225,303	273,842	121,623	3,234,890

15. The Value Payable Post. This is a system under which the Postal Department undertakes to deliver registered articles sent by parcel post within the Commonwealth, and to recover from the addressee on delivery a specified sum of money fixed by the sender, and to remit the sum to the sender by money order, for which the usual commission is charged. The object of the system is to meet the requirements of persons who wish to pay at the time of receipt for articles sent to them, and also to meet the requirements of traders and others who do not wish their goods to be delivered except on payment. In addition to the ordinary postage, commission on the value of the articles transmitted at the rate of twopence on sums not exceeding ten shillings, and one penny

for each additional five shillings or part thereof, must be prepaid by postage stamps affixed to the articles, distinct from the postage, and marked "commission." The registration fee (threepence) and the proper postage must also be prepaid. If the addressee refuse delivery, the parcel is returned to the sender free of charge. Any article that can be sent by parcel post may be transmitted as a value-payable parcel. Letters may also be sent as value-payable parcels, if prepaid at the letter rate of postage and handed to the parcels clerk in the same manner as in the case of parcels. The subjoined statement gives particulars of the number and value of parcels sent through the Value Payable Post in each State during the years 1908 to 1912. From these figures it will be seen that the business in Queensland is greatly in excess of the combined transactions of all the other States, owing to the fact that the system has been established in that State for some years, but was only extended to the whole Commonwealth with the advent of Federal control of the post office. Western Australia is the only other State to make use of this system to any extent, the business transacted by that State and Queensland amounting to 84 per cent. of the total for the Commonwealth.

VALUE PAYABLE PARCELS POST.—NUMBER POSTED, VALUE COLLECTED, AND REVENUE, 1908 to 1912.

	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
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NUMBER OF PARCELS POSTED.

	No.	No.	No.	No.	No.	No.	No.
1908	6,400	856	26,865	125	13,093	62	47,401
1909	7,585	1,051	31,765	149	19,250	42	59,842
1910	7,901	894	34,917	214	21,940	110	65,976
1911	9,198	1,142	37,803	195	21,391	66	69,795
1912	10,210	1,072	44,973	395	21,821	41	78,512

VALUE COLLECTED.

	£	£	£	£	£	£	£
1908	11,755	1,342	36,924	236	21,331	132	71,720
1909	10,926	1,697	39,351	234	30,712	93	83,013
1910	14,736	1,656	43,478	288	34,697	344	95,199
1911	15,314	2,312	52,628	413	35,659	165	106,491
1912	13,053	2,160	53,061	827	37,307	92	106,500

REVENUE, INCLUDING POSTAGE, COMMISSION ON VALUE, REGISTRATION AND MONEY ORDER COMMISSION.

	£	£	£	£	£	£	£
1908	985	135	3,713	18	1,869	9	6,729
1909	937	164	4,112	22	2,603	6	7,844
1910	1,201	162	4,634	19	3,178	18	9,212
1911	1,087	225	5,241	28	2,943	9	9,533
1912	1,147	143	5,418	54	3,027	6	9,795

16. Transactions of the Dead Letter Office.—Under sections 45 to 53 of the Post and Telegraph Act 1901 the Postmaster-General may cause all unclaimed and undelivered postal articles originally posted within the Commonwealth which have been returned from the place to which they were forwarded to be treated as unclaimed

articles and opened. Every unclaimed letter and postal article must be kept for the prescribed period at the office to which it has been transmitted for delivery, and must then be sent to the General Post Office. Letters and packets originally posted elsewhere than in the Commonwealth are returned to the proper authorities in the country in which they were so posted, or, if originally posted in another State, are returned to the General Post Office of that State; but unclaimed or undelivered newspapers may be forthwith sold, destroyed, or used for any public purpose. Opened postal articles not containing anything of value are returned to the writer or sender if his name and address can be ascertained, but may otherwise be destroyed forthwith. As regards opened letters and packets containing valuable or saleable enclosures, a list and memorandum of the contents are kept, and a notice is sent to the person to whom the letter or packet is addressed if he be known, or otherwise to the writer or sender thereof if he be known. Upon application within three months of the date of such notice the letter or packet may be claimed by the addressee, or, failing him, by the writer or sender. If unclaimed within three months, the letter and contents may be destroyed or sold, and the proceeds paid into the consolidated revenue fund. The following table shews the total number of letters, postcards, and packets dealt with by the Dead Letter Offices in the Commonwealth during the year 1912, together with the number of inland, interstate, and international letters either returned to writers, delivered, etc., destroyed, or returned as unclaimed:—

TRANSACTIONS OF DEAD LETTER OFFICES IN THE COMMONWEALTH, 1912.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wlth.
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LETTERS (,000 OMITTED).

Returned to writers, delivered, etc. ...	399	643	158	88	131	52	1,471
Destroyed in accordance with Act ...	105	68	17	22	14	6	232
Returned to other States or Countries as unclaimed	121	73	48	28	45	15	330
Total	625	784	223	138	190	73	2,033

POSTCARDS (,000 OMITTED).

Returned to writers, delivered, etc. ...	19	12	9	22	35	22	119
Destroyed in accordance with Act ...	31	9	3	3	3	1	50
Returned to other States or Countries as unclaimed	9	9	3	2	4	1	28
Total	59	30	15	27	42	24	197

PACKETS (,000 OMITTED).

Returned to writers, delivered, etc. ...	392	56	147	29	57	14	695
Destroyed to accordance with Act ...	44	521	21	42	6	...	634
Returned in other States or Countries as unclaimed	4	32	34	24	40	15	149
Total	440	609	202	95	103	29	1,478
Grand Total (letters, postcards, & packets)	1,124	1,423	440	260	335	126	3,708

17. **Post Offices and Receiving Offices and Employees.**—The following tables shew, as far as returns are available, the numbers of post and receiving offices and the corresponding numbers of employees in each State and in the Commonwealth at the end of the year 1901, and from 1908 to 1912 inclusive :—

NUMBER OF POST OFFICES AND RECEIVING OFFICES, 1901 and 1908-12.

State.	1901.		1908.		1909.		1910.		1911.		1912.	
	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.	Post Offices.	Receiving Offices.
New South Wales ...	1,684	524	1,842	526	1,884	513	1,911	526	1,948	542	2,000	559
Victoria ...	1,637	18	1,633	713	1,642	728	1,655	765	1,720	824	1,730	844
Queensland* ...	411	823	499	896	522	856	558	822	576	786	593	770
South Australia ...	699	..	686	29	631	92	648	90	662	84	668	95
Western Australia ...	187	28	320	72	331	82	343	87	372	107	390	130
Tasmania† ...	376	...	378	36	377	40	391	38	386	47	391	55
Commonwealth ...	4,994	1,393	5,358	2,272	5,387	2,311	5,506	2,328	5,664	2,390	5,772	2,453

* For the year 1901 the number of receiving offices is included in post offices in the official returns, and separate figures here given are estimated. † The return for 1901 includes both post offices and receiving offices.

NUMBER OF EMPLOYEES AND NUMBER OF MAIL CONTRACTORS, 1901 and 1908-12.

State.	1901.		1908.		1909.		1910.		1911.		1912.	
	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.	Employees.	Mail Contractors.
New South Wales ...	5,636	984	7,343	1,305	7,469	1,553	8,622	1,602	10,344	1,733	12,614	1,798
Victoria ...	3,962	890	5,989	776	6,285	804	7,043	848	8,533	886	7,845	1,060
Queensland* ...	2,616	—	3,073	550	3,146	589	3,247	720	4,455	747	3,942	768
South Australia† ...	1,945	—	1,871	237	1,896	259	1,905	268	2,296	361	2,173	364
Western Australia ...	1,303	140	1,670	206	1,736	234	1,894	233	2,621	251	2,246	251
Tasmania† ...	865	—	843	177	874	186	969	189	1,178	260	1,094	297
Commonwealth ...	16,327	2,014	20,789	3,251	21,406	3,625	23,680	3,860	29,929	4,218	29,914	4,458

* Country postmasters and receiving officers included in employees. † Non-official postmasters are included in employees. ‡ The return for 1901 includes all persons in the pay of the Postal Department.

18. **Postal Routes.**—The following table shews the length of postal routes and the number of miles travelled by mail conveyances during the year 1912 :—

POSTAL ROUTES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES OF ROUTE.							
Railway ...	3,786	3,481	4,521	2,225	2,150	679	16,842
Water ...	2,768	57	2,267	9,179	3,991	911	19,173
Other ...	38,870	11,920	29,988	8,954	9,410	2,157	101,299
Total... ..	45,424	15,458	36,776	20,358	15,551	3,747	137,814

POSTAL ROUTES, 1912—Continued.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
MILES TRAVELLED BY MAIL CONVEYANCES (,000 omitted.)							
Railway ...	5,493	4,378	4,033	1,781	1,420	835	17,940
Water ...	1,156	22	180	297	155	210	2,020
Other ...	9,741	3,897	4,150	1,626	826	897	21,137
Total ...	16,390	8,297	8,363	3,704	2,401	1,942	41,097

19. **Gross Revenue of Postal Department.**—The following table shews the gross revenue of the Postal Department for the years ended 30th June, 1901 and 1909 to 1913 inclusive, under three heads, viz., the Postal, the Telegraph, and the Telephone branches. In the Postal branch is included the revenue derived from money-order commissions, poundage on postal notes, private boxes and bags, and miscellaneous sources. The introduction of penny postage throughout the Commonwealth is responsible for an estimated loss to the Department of approximately £441,000 for the year 1912-13.

GROSS REVENUE OF POSTAL DEPARTMENT, 1901 and 1909-13.

Year ended 30th June.	Postal Branch.	Telegraph Branch.	Telephone Branch.	Total.
	£	£	£	£
1901* ...	516,181	224,484†	†	740,665
1909 ...	2,325,326	642,548	441,551	3,409,425
1910 ...	2,541,080	681,038	509,623	3,731,741
1911 ...	2,646,730	740,428	518,857	3,906,015
1912 ...	2,382,967	781,101	752,531	3,916,599
1913 ...	2,547,407	817,498	860,011	4,224,916

* Period from 1st March to 30th June, 1901. † Including telephone revenue. ‡ Included in telegraph revenue.

The following table gives an analysis of the gross earnings of the Postal Department in each State and in the Commonwealth during the year ended 30th June, 1913:—

ANALYSIS OF GROSS REVENUE OF POSTAL DEPARTMENT, 1912-13.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
	£	£	£	£	£	£	£
Postage ...	895,236	633,906	304,215	185,499	146,328	88,035	2,253,219
Telegraphs ...	277,296	158,677	146,304	119,044	89,013	26,664	817,498
Telephones ...	344,257	243,305	111,199	71,953	63,248	26,049	860,011
Money order commission ...	51,984	31,022	16,917	8,938	15,380	5,385	129,626
Poundage on postal notes ...	9,681	4,692	5,465	2,602	2,103	1,074	7
Private boxes and bags ...	49,723	36,247	17,345	17,153	13,136	5,341	138, 5
Miscellaneous ...							
Total ...	1,623,177	1,107,849	601,945	405,189	329,208	152,548	4,224,9

20. **Expenditure in respect of the Postal Departments.**—The subjoined table shew the total expenditure in respect of the Postal Department in the Commonwealth for each of the years ended 30th June, 1903 and 1908 to 1913 inclusive. The figures given include certain items of expenditure, such as rent, repairs and maintenance of buildings, fittings and furniture, sanitation, water supply, new buildings and additions, which are under the control of the Department of Home Affairs, and interest on transferred properties.

TOTAL EXPENDITURE IN RESPECT OF POSTAL DEPARTMENT, 1902-3 and 1908-13.

Year.	1902-3.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Expenditure ...	£ 2,568,846	3,345,841	3,611,678	3,786,756	4,343,231	5,345,803	6,284,053

The following table shews the distribution of expenditure on various items in each State during the year ended 30th June, 1913 :—

DISTRIBUTION OF EXPENDITURE OF POSTAL DEPARTMENTS, 1912-13.

Particulars.	Central Office.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth
	£	£	£	£	£	£	£	£
Salaries and Contingencies—								
Salaries ...	15,095	830,056	550,226	260,418	188,043	201,921	70,776	2,116,545
Conveyance of mails ...	...	307,412	141,295	172,483	77,366	74,746	42,196	815,498
Contingencies ...	5,069	439,790	317,272	197,642	89,497	122,765	48,510	1,220,545
Cables ...	17,500	...	...	...	...	...	...	17,500
Ocean mails ...	170,000	...	...	...	...	...	...	170,000
Miscellaneous ...	1,488	4,126	2,835	1,838	1,613	3,303	242	15,445
Pensions & Retiring Allowances ...	...	18,563	17,860	2,710	...	3,720	...	42,853
Rent, Repairs, Maintenance ...	1,682	36,501	21,549	10,131	6,162	7,488	2,023	86,436
Supervision of Works ...	...	3,816	945	1,290	960	2,705	281	9,044
Proport'n of Audit Office exps. ...	...	1,144	447	447	34	219	190	3,183
Unforeseen expenditure ...	...	296	257	212	...	38	25	862
New Works—								
Telegraph and Telephone ...	371	513,894	341,893	168,523	80,823	120,505	22,682	1,248,906
New Buildings, etc. ...	...	65,146	26,528	11,952	11,625	27,808	1,978	145,037
Interest on transferred properties ...	...	105,200	60,450	41,637	37,926	30,315	9,671	285,099
Purchase of Sites* ...	106,276	...	...	...	...	...	...	106,276
Officers' Compensation† ...	734	...	...	...	...	...	...	734
Total ...	318,215	2,325,946	1,481,120	869,573	494,252	595,533	199,414	6,284,053

* Particulars of apportionment to each State not yet available. † Not allocated to States.

21. **First Complete Balance Sheet of the Postmaster-General's Department.**—The first complete balance sheet and profit and loss account of the Postmaster-General's Department, and what is claimed to be the first complete balance sheet of any Postal Department in the English speaking world, was presented in November, 1913, for the year ending 30th June, 1913. Summarised, the financial results of the working of the Department are shewn to be as follows :—Total earnings, £4,243,292; total working expenses, £4,263,373, or a deficit of £20,081. To this deficit must be added the interest ($3\frac{1}{2}$ per cent.) on capital, viz., £376,409, and pensions and retiring allowances, £10,612, making a total deficit of £407,102. The Postal branch is the only one to shew a profit, viz., £23,152, losses occurring in the other branches as follows:—Telephone, £221,757; telegraph, £164,108; wireless telegraphy, £11,599. These figures do not agree with those given in the two preceding paragraphs under the heads of "revenue" and "expenditure," but it must be borne in mind that "earnings" and "working expenses" refer to the actual amount earned in the service of the public, and the cost incurred in such earnings, and are not to be confused with "revenue" and "expenditure," the latter terms including many items (e.g., interest on transferred properties, pensions, etc.) which cannot strictly be regarded as "earnings" or "working expenses."

22. **Royal Commission on Postal Services.**—In 1908 a Royal Commission was appointed to report on the Postal, Telegraphic, and Telephonic Services of the Commonwealth. An account of the work done by the Commission will be found in previous issues of the Year Book. (See Year Book No. 6, p. 766.)

§ 2. Telegraphs.

1. First Lines Constructed.—The electric telegraph was first introduced into Australia for use by the public in the year 1854, when a line from Melbourne to Williamstown was opened. The first line in South Australia, from Adelaide to Port Adelaide, was opened in 1856, while the first line in New South Wales was brought into operation in 1858, when the line from Sydney to Liverpool, twenty-two miles in length, was opened. In Tasmania the first telegraphic line was completed in 1857, while in the following year communication was established between Sydney, Melbourne, and Adelaide. The first line to be constructed in Queensland was that between Brisbane and Rockhampton, a distance of 396 miles, which was opened in 1864. In Western Australia the first telegraph constructed was from Perth to Fremantle, a distance of twelve miles, which was brought into use in 1869, and in the same year the cable joining Tasmania with the continent of Australia was completed.

2. Development of Services.—During the period from 1871 to 1881 great progress was made throughout Australia in the way of telegraphic construction, over 14,000 miles of line, exclusive of railway telegraph lines, being opened for use during the period mentioned, making the total length of the line open at the end of the year 1881, 25,470 miles. At the present time the systems of telegraph lines throughout Australia are well developed. The longest line extends from Thursday Island, in Torres Strait, by submarine cable to Paterson, on the mainland of Cape York Peninsula; from Paterson the line runs in a southerly direction as far as Brisbane, where it joins the main interstate line to Sydney, Melbourne, and Adelaide; from Adelaide it runs to Port Augusta, then on to Port Lincoln, on Eyre's Peninsula, and thence to Eucla, on the Western Australia boundary; from Eucla the line extends along the coast of the Great Australian Bight to Albany, and thence it runs adjacent to the west coast of Western Australia as far as Onslow, *via* Perth, Geraldton, and Carnarvon. From Onslow connection extends to Broome, in Roebuck Bay, from which place communication is made to Singapore by the Eastern Extension Company's cable. From Roebuck Bay the line crosses the Kimberley district in an easterly direction, and then runs north as far as the terminus at Wyndham. In Queensland a line runs to Burketown, near the coast of the Gulf of Carpentaria, *via* Normanton; another line extends to Cloncurry and Urandangi, in the extreme west of the State. Branch lines extend to all important coastal and inland towns, while considerable networks of lines converge from the country districts towards the centres of population. From Adelaide the transcontinental line runs in a northerly direction to Darwin, from which place communication is provided with Europe by submarine cable by way of Batavia, Singapore, and Madras. In Western Australia a line runs from Eucla to the Coolgardie goldfields *via* Balladonia and Dundas, and from Coolgardie communication is provided with Perth and with Sir Samuel, in the East Murchison district.

3. Number of Telegraph Offices and Length of Lines and Wire Open.—The following table shews the number of telegraph offices and the length of telegraphic lines and of telegraph wire, exclusive of railway telegraphs, available for use in the Commonwealth at the end of the year 1901, and from 1908 to 1912 inclusive:—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE, AVAILABLE FOR USE, 1901 and 1908-12.

Particulars.			1901.	1908.	1909.	1910.	1911.	1912.
No. of Offices	...	No.	2,567	3,445	3,597	3,883	4,041	4,180
Length of Line	...	miles*	41,951	43,455	43,849	43,657	44,013	47,923
„ Wire	...	„ †	101,708	90,646	92,909	96,825	97,053	101,218

* Including telephone and railway telegraph lines in New South Wales, up to and including 1908, and including railway telegraph lines in South Australia up to and including 1905. † Including telephone and railway telegraph wires in New South Wales up to and including 1906, and including railway telegraph wires in South Australia up to and including 1905.

The following table gives corresponding particulars for each State for the year 1912. The figures are exclusive of railway telegraphs :—

NUMBER OF TELEGRAPH OFFICES, LENGTH OF LINE AND WIRE IN EACH STATE, 1912:

Particulars.		N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
No. of Offices	No.	1,384	1,071	671	414	370	270	4,180
Length of Line	miles	18,348½	4,127½	10,679½	5,741	7,298½	1,728	47,923
„ Wire	„	32,042	13,493½	24,804½	14,347	12,827	3,704	101,218

4. **Revenue and Expenditure.**—Particulars as to the revenue from the telegraph systems for the years 1901 and 1909-13 are given on page 679, while particulars as to the expenditure on telegraph works for the year 1910-11 are given on page 680.

5. **Number of Telegrams Despatched.**—The following table shews the total number of telegrams despatched in the Commonwealth in 1901 and in each of the years 1903 to 1912 inclusive :—

NUMBER OF TELEGRAMS DESPATCHED (,000 OMITTED), 1901 and 1908-12.

Year	...	...	...	1901.	1908.	1909.	1910.	1911.	1912.
Number*	...	...	...	8,003	11,324	11,345	12,238	12,821	13,343

* Including interstate cablegrams.

The following table shews the number of telegrams despatched in each State in 1912 for delivery in that State, and the number despatched in each State for delivery in other States, and also the total number of telegrams—exclusive of cablegrams—despatched in each State :—

NUMBER OF TELEGRAMS DESPATCHED IN EACH STATE, 1912 (,000 OMITTED).

State, etc.	...	...	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Inland (counted once)			3,632	1,994	1,865	924	1,372	317	10,104
Interstate*	...	...	974	882	502	391	342	148	3,239
Total	...	...	4,606	2,876	2,367	1,315	1,714	465	13,343

* Including interstate cablegrams.

6. **Rates for Transmission of Telegrams.**—The present rates for the transmission of telegrams within the Commonwealth were fixed by section 7 of the Post and Telegraph Rates Act 1902, and came into force on the 1st November, 1902. Under this Act charges are made for telegrams according to whether they are “ordinary” or “press” telegrams. “Press” telegrams are defined to mean those the text of which consists of political, commercial, etc., information, and of news intended for publication in a newspaper. The telegram must be sent by an authorised correspondent, and must be addressed to a registered newspaper or recognised news agency. The subjoined tables shew the scales of charges :—

SCALE OF CHARGES FOR ORDINARY TELEGRAMS, 1913.

Particulars.	Town and Suburban, within Prescribed Limits, or within 15 Miles from the Sending Station.		Other Places within the State, except Town and Suburban.		Interstate.	
	s.	d.	s.	d.	s.	d.
Including address and signature—						
Not exceeding 16 words	0	6	0	9	1	0
Each additional word	0	1	0	1	0	1

Double the foregoing rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for telegrams sent on "urgent" forms.

SCALE OF CHARGES FOR PRESS TELEGRAMS, 1913.

Particulars.	Within any State.		Interstate.		Relating to Parlia- mentary, Executive, Departmental, and other Common- wealth Proceedings as may be prescribed.
	s.	d.	s.	d.	
Not exceeding 25 words	0	6	1	0	...
From 26 to 50 words	0	9	1	6	...
From 51 to 100 words	1	6	3	0	...
Every additional 50 words	0	6	1	0	...
Within the Commonwealth.					
Not exceeding 25 words	...	...	...	...	1 0
From 26 to 100 words	...	...	...	...	1 6
Every additional 50 words	...	...	...	...	0 6

7. Letter-telegrams.—Approval has been given by the Postal Department for the establishment of a system of letter telegrams, in which a minimum charge of 1s. up to 40 words, and $\frac{1}{2}$ d. per additional word, has been paid. These will be accepted on the condition that they be handed in at offices (at present confined to the cities and larger towns) between the hours of 7 p.m. and midnight. The letter-telegrams will be forwarded during the night by telegraph to the office of destination and will be delivered as ordinary letters by the first letter delivery, or will be despatched by mail to the address in the ordinary way.

8. Wireless Telegraphy.—Under the Wireless Telegraphy Act 1905 the Postmaster-General is given the exclusive privilege of establishing and using stations and appliances for receiving and transmitting messages by wireless telegraphy within Australia. While he is empowered to grant licenses to establish and use stations and appliances for wireless telegraphy, the only licenses so far issued have been for experimental work. The Act does not apply to ships belonging to the King's Navy. Viewing the insular position of Australia, it was evident that, for an effective system of radio-telegraphic communication to be given, not only must the service offered be continuous, but the distances separating the stations must to a great extent be governed by the normal working range of the vessels with which communication would have to be established. With this object in view, the Commonwealth Government have constructed and erected

nineteen stations at or near the following localities :—Port Moresby, Thursday Island, Cooktown, Townsville, Rockhampton, Brisbane, Sydney, Flinders Island, Melbourne, Hobart, Mount Gambier, Adelaide, Esperance, Perth, Geraldton, Broome, Roeburne, Wyndham, and Darwin. To these must be added the station installed at Marquarie Island, used chiefly for meteorological purposes. It is intended eventually to increase the number of stations to thirty-two. To complete the external scheme of radio-telegraphic communication, and so form the Australian unit of the Imperial scheme, high-power stations were essential. The stations at Sydney and Perth are of this nature, the former city being capable of communication with New Zealand and the radio-telegraphic stations in the Pacific, and the latter with Cocos Island. A third high-power station will, in the near future, be erected at Darwin, and will operate with Singapore and the Islands of the Pacific.

All the other stations are of a lower power, and constitute the internal scheme of inter and ship-to-shore communication. The working range by day—and under unfavourable conditions—of the low-power stations is 400 miles; that of the high-power stations being 1250 miles, though the proposed installation at Darwin will have a day range of over 2000 miles. Under more favourable conditions, however, messages can be transmitted over much greater distances, extending in the case of low-power stations to over 1500 miles.

The ordinary ship-to-shore communication rates for ships registered by the Commonwealth are 5d. per word, allocated as follows :—3d. for land station and 2d. for ship station charge, while for vessels registered by other administrations the rates are 10d. per word, allocated as follows :—6d. for land station, and 4d. for the ship station charge. In all cases must be added the inland forwarding charge of 1d. per word. Between Port Moresby and Thursday Island the rate is 2d. per word (plus the inland forwarding rate), which rate is also charged between the mainland and Flinders Island or Macquarie Island, no forwarding charge being made at these two stations.

In December, 1909, a conference of representatives of the Commonwealth, New Zealand, the High Commissioner for the Western Pacific, Fiji, the Admiralty, and the Pacific Cable Board was convened at Melbourne to report upon the establishment of wireless telegraphy in the Pacific. The chief recommendations of this Conference were :—(a) That high-power stations be established at Sydney, Doubtless Bay (New Zealand), Suva (Fiji), and Ocean Island, and (b) that medium-power stations be established at Tulagi (Solomon Islands), and Vila (New Hebrides). The total cost of construction of the scheme covered by these recommendations was £42,000, while the total annual cost was estimated at £13,820 for a continuous service, and £9970 for a restricted service. It was proposed to apportion the cost between Great Britain, New Zealand, Fiji, and Australia. These recommendations were adopted by the Commonwealth Government, but the British Government would not agree to the erection of high-power stations at Suva and Ocean Island. Up to the present no further concerted action has taken place, but radio-telegraphic stations have been erected at Suva, Vila, and Tulagi, under the control of the High Commissioner of the Pacific, while the New Zealand Government has erected high-power stations at Awanui (Auckland), and Awarua (Bluff), and low power stations at Auckland, Chatham Island and Wellington, and is also proceeding with the construction and erection of stations at Gisborne, New Plymouth, and Christchurch.

§ 3. Submarine Cables.

1. **First Cable Communication with the Old World.**—In previous issues of the Year Book (No. 6, p. 770) will be found a detailed account dealing with the connection of Australia with the old world by means of submarine cables.

2. The Tasmania - Victoria Cables.—A submarine cable joining Tasmania to the continent of Australia was opened for use in 1869, the total length being 170 miles. The line was owned by the Eastern Extension Telegraph Company, and was subsidised by the Tasmanian Government until the year 1909. On the 28th February, 1908, the Postmaster-General entered into an agreement with Messrs. Siemens Brothers and Company Ltd., of London, for the manufacture and laying of two submarine cables between Tasmania and Victoria. The new cables were taken over on the 24th March, 1909, and opened to the public on the 1st May, 1909, the day following the expiration of the agreement with the Eastern Extension Company. Their aggregate length is approximately 350 nautical miles of main cable, and 20 nautical miles each of intermediate and shore-end cable, making a total of 390 nautical miles. The contract price was £52,447.

3. The Eastern Extension Company's Cables.—In addition to the first Victoria-Tasmania cable and the original cable from Darwin (see Year Book No. 6, p. 770), the Eastern Extension Company has constructed several other cables connecting with various places in the Commonwealth. (a) In 1879 the original cable *via* Banjoewangie was duplicated, the States of New South Wales, Victoria, South Australia, Western Australia and Tasmania having agreed to pay the above company a subsidy of £32,400 per annum for a period of twenty years, the amount to be divided between the States on a population basis. (b) In 1881 a cable was constructed connecting Broome, in Roebuck Bay, W.A., with Banjoewangie; from Broome there is direct telegraphic communication with Perth, from which place communication is made with the Eastern States by the interstate line *via* Albany, Eucla, and Port Augusta. (c) In July, 1899, the company offered to lay a cable direct to Great Britain *via* the Cape of Good Hope, and also offered reductions in the rates charged, if the States would agree to certain conditions giving the company the right of direct dealing with the public. The States of South Australia, Western Australia and Tasmania accepted the terms offered, and New South Wales entered into the agreement in January, 1901. The cable was opened *via* Fremantle and Durban in October, 1901. (d) Another submarine cable from Fremantle to Adelaide forms an alternative line of communication between the eastern States and Western Australia. (e) There is an alternative route, partly belonging to the Eastern Extension Company and connecting the Port Darwin-Singapore cable with London, *via* Hong Kong, Shanghai, Possiet Bay (Pacific Russia), Libau (Russian Baltic), and Newbiggin (England). (f) In 1909 a cable was laid from Java to Cocos Island, thus affording another route from Australia to South Africa, whilst in April, 1911, a radio-telegraphic station was opened at Cocos Island, thus strengthening the line of communication between Australia and the East.

4. The Pacific Cable.—In July, 1898, a conference of representatives of Great Britain, Canada, New South Wales, Victoria, Queensland, South Australia and New Zealand was held for the purpose of considering a project for a cable to be laid across the Pacific Ocean, touching only British territory on its way from Australia to Canada, thus providing an "All Red" route, as it is termed, for a cable system between England and Australia. In the following year it was agreed at a meeting held by representatives of the countries interested that the cable should be laid and that Great Britain and Canada should each pay five-eighteenthths of the cost, and the States of New South Wales, Victoria, Queensland, and the Dominion of New Zealand should each pay one-ninth. The construction and management of the cable were placed under the control of a Board composed of seven members—two each from Great Britain, Canada, and Australia, and one from New Zealand—called the Pacific Cable Board. The Australian shore-end of the cable was landed at Southport, Queensland, in March, 1902, and the cable was completed on the 31st October, 1902, and opened for traffic on the 7th December of the same year. There are cable-stations at Norfolk Island, Fiji, and Fanning Island, and a branch cable runs from Norfolk Island

to New Zealand. In 1910 the Board leased a wire from Bamfield, British Columbia, to Montreal, thus extending the Pacific cable system from Queensland to Montreal. The traffic is then carried across the Atlantic to the United Kingdom by the cables of the Anglo-American and Commercial Companies. The following table shews particulars of the revenue, expenditure, total loss, and the proportion of the loss payable by the Commonwealth for each financial year since the opening of the cable:—

REVENUE, EXPENDITURE, AND LOSS ON WORKING OF PACIFIC CABLE, 1903 to 1913.

Year ended the 31st March.	Revenue.	Expenditure (in- cluding Annuities and Renewal Fund).	Loss.	Commonwealth Proportion of Loss.
	£	£	£	£
1903	...	...	90,518	30,514
1904	80,118	167,869	87,751	29,250
1905	87,446	163,296	75,850	25,283
1906	91,952	164,508	72,556	24,185
1907	113,516	167,439	53,923	18,307
1908	110,160	172,523	62,363	20,787
1909	113,093	173,981	60,888	20,295
1910	111,724	171,312	59,588	19,862
1911	133,678	186,888	48,210	16,071
1912	159,150	199,649	40,499	13,500
1913	167,901	200,171	32,270	10,757

* To 30th June in each year.

5. New Zealand Cables.—A submarine cable joining New Zealand to the Australian Continent was laid in 1876. The line is 1191 miles in length. The Australian shore-end of the cable is at Botany Bay, while the New Zealand terminus is at Wakapuaka, near Nelson, in the Middle Island, from which place another cable, 109 miles in length, is laid to Wanganui, in the North Island. For a period of ten years after its opening the cable was subsidised by the New South Wales and New Zealand Governments, the total contributions amounting to £10,000 a year. The branch from Norfolk Island to New Zealand of the Pacific cable was opened on the 23rd April, 1902. The length of this cable is 597 miles, the New Zealand terminus being at Doubtless Bay in the north of the North Island. During 1911 a scheme to lay a second cable between New Zealand and Australia (Auckland to Sydney) was adopted by the various Governments concerned, and the laying of the new cable was completed on the 24th December, 1912, the cable being opened for traffic on the 31st December, 1912.

6. The New Caledonian Cable.—In April, 1892, a French company, known as the Compagnie Française des Câbles Télégraphiques, entered into an agreement with the French, the New South Wales, and the Queensland Governments to lay down a submarine cable between New Caledonia and Queensland in return for guarantees by the French Government to the extent of £8000, and by the Governments of New South Wales and Queensland to the amount of £2000 each annually for a period of thirty years. The cable was opened for use in October, 1893, the Australian shore-end being at Bundaberg. The guarantees of the Governments of New South Wales and Queensland have now been transferred to the Commonwealth Government.

7. Number of Cablegrams Received and Despatched.—The subjoined table shews the number of cablegrams received and despatched in the Commonwealth from 1910 to 1912:—

CABLEGRAMS RECEIVED AND DESPATCHED, COMMONWEALTH, 1910-12.

Particulars.	Cablegrams Received.			Cablegrams Despatched.			Total Cablegrams Received and Despatched.		
	1910.	1911	1912.	1910.	1911.	1912.	1910.	1911.	1912.
Number...	241,723	256,912	288,678	154,666	271,540	297,806	496,389	528,452	586,484

The following table shows the total number of cablegrams received and despatched in each State during the year 1912. The figures given are exclusive of interstate cablegrams, which are classed as interstate telegrams (see § 2 hereof) :—

NUMBER OF CABLEGRAMS RECEIVED AND DESPATCHED IN EACH STATE, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.*	C'wealth.*
Number received ...	146,586	89,709	11,916	19,843	14,630	5,994	288,678
„ despatched...	146,049	92,750	14,457	18,375	19,440	6,735	297,806
Total ...	292,635	182,459	26,373	38,218	34,070	12,729	586,484

* Exclusive of interstate cablegrams, which are included with interstate telegrams (see § 2 ante).

8. **Lengths of Cable Routes.**—The following table gives the lengths of various cable routes :—

LENGTHS OF CABLE ROUTES.

Via Roebuck Bay.		Via Darwin.		Via South Africa.	
	Miles.		Miles.		Miles.
Perth to Roebuck Bay ...	1,486	Adelaide to Darwin ...	2,134	Perth to Mauritius ...	4,417
Roebuck Bay to Banjoewangie ...	970	Darwin to Banjoewangie ...	1,150	Mauritius to Durban ...	1,786
Banjoewangie to London ...	9,841	Banjoewangie to London ...	9,841	Durban to Cape Town ...	800
				Cape Town to Madeira ...	5,715
				Madeira to Penzance ...	1,341
				Penzance to London ...	260
Total ...	12,296	Total ...	13,125	Total ...	14,319

Via Vancouver.		Via Russia.	
	Miles.		Miles.
Southport (Queensland) to Norfolk Island ...	963	Sydney to Darwin ...	2,992
Norfolk Island to Suva (Fiji) ...	1,129	Darwin to Hong Kong ...	4,237
Suva to Fanning Island ...	2,351	Hong Kong to Possiet Bay ...	2,647
Fanning Island to Bamfield (Canada) ...	3,960	Possiet Bay to Libau ...	6,399
Across Canada ...	3,450	Libau to Newbiggin (England) ...	1,657
Canada to Ireland ...	2,450		
Total ...	14,323	Total ...	17,932

9. **Cable Rates.**—In 1872 the cable rate to England was nine guineas for twenty words, but when word rates were brought into general use in 1875, the rate between Great Britain and Australia was fixed at ten shillings and sixpence, subsequently altered to ten shillings and eightpence. In 1886 the Eastern Extension Telegraph Company reduced the rate to nine shillings and fourpence a word for ordinary messages, to seven shillings and a penny for Government messages, and to two shillings and eightpence a word for press messages. At a conference of the postal and telegraphic authorities held

in March, 1891, the proposal to reduce the rates to four shillings a word for ordinary messages, three shillings and eightpence for Government, and one shilling and tenpence for press messages was agreed to, the States of New South Wales, Victoria, South Australia, Western Australia, and Tasmania undertaking to make good half the loss which the Eastern Company might suffer through such reductions. The States guaranteed to the company one-half of the amount of receipts short of the sum of £237,736—the amount received by the company in 1889 in respect of cable charges—the other half to be borne by the company. The Government of South Australia was also guaranteed by the other contracting States against any loss to the revenue which the lower cable rates might cause in the working of the overland lines. Queensland subsequently joined the other States in these guarantees. In 1893, however, owing to the heavy losses incurred, the rates for ordinary messages were increased to four shillings and ninepence per word, and at the same time New Zealand joined the guarantees to the company and to South Australia.

(i.) *Present Rates to Great Britain.* On the acceptance by three of the States of the terms offered by the Eastern Extension Telegraph Company for the construction of a cable *via* South Africa the rate for ordinary messages was reduced in May, 1900, to four shillings a word. It was further reduced to three shillings and sixpence in January, 1901, and to three shillings in January, 1902, at which amount the standard rate by all routes for cablegrams to Great Britain has since remained. The scale of reductions is governed by a revenue standard, and when the latter averages £330,000 per annum a further reduction to two shillings and sixpence will be made. In September, 1912, the "through" charge for press cables was reduced from ninepence to sevenpence-halfpenny per word.

(ii.) *Deferred Cablegrams.* With a view to affording additional cable facilities and to keeping the Pacific cable fully occupied during the whole twenty-four hours, proposals were made by the Postmaster-General's Department for the adoption of a system of deferred cablegrams, *i.e.*, for cablegrams to be delivered after a lapse of twenty-four hours at reduced rates of one shilling and sixpence per word for cablegrams in code, and one shilling per word for cablegrams in plain language. A meeting of representatives of the Administrations and companies concerned was held in London in November, 1910, and the new rates came into force on the 1st January, 1912. Messages can only be transmitted after non-urgent private cablegrams and press cablegrams. Those which have not reached their destination within a period of twenty-four hours from the time of handing in are transmitted in turn with cablegrams charged full rate. They may be sent *via* the Pacific or Eastern routes to all countries to which the ordinary rate exceeds tenpence per word. On the 15th December, 1911, a system of deferred press cablegrams between Vancouver and Australia was instituted. The rate charged is one penny three-farthings per word, and the conditions of despatch are the same as those for private deferred cablegrams.

(iii.) *Week-End Cable Letters.* Since the 3rd January, 1913, week-end cable letters may be exchanged between the United Kingdom and Australia *via* Pacific and Eastern Extension Company's lines on the following conditions, *viz.*:—Week-end cable letters lodged or received at Pacific Cable offices at Sydney or Southport and Eastern Extension Cable Company's offices at Adelaide or Perth up to midnight on Saturday for the United Kingdom will be transmitted between midnight on Saturday and Monday morning, other traffic being given preference. Week-end cable letters may also be lodged at any post office for transmission to those cable offices by post or, if so desired, by telegraph, provided in the latter case that a special rate as shewn hereunder be paid, in addition to cable charge. On arrival in the United Kingdom such cable letters will be delivered by post unless the senders desire them to be delivered by telegraph, in which case local rates as shewn hereunder must be paid in addition to cable charge. Week-end cable letters shall be written in plain language and shall be subject to the same rules and regulations as deferred ordinary telegrams, except that those which are to be delivered

by post may not be addressed to a code address. Week-end cable letters received in Australia will be posted at the cable office so as to reach the addressee not earlier than 8 a.m. on Tuesday, unless arrangements have been made by the senders for them to be telegraphed to addressee for delivery on Tuesday morning. The charge for week-end cable letters was originally ninepence per word, subject to a minimum charge of eighteen shillings per telegram when inland wires are not used in Australia or United Kingdom. The present minimum charge is fifteen shillings for twenty words. The additional charge for telegraphing such week-end cable letters shall be the Commonwealth inland rates in Australia and one halfpenny per word in the United Kingdom. Week-end cable letters shall be free of postage in the same way as ordinary telegrams, provided they are enclosed in envelopes plainly endorsed "Week-end cable letters."

(iv.) *Rates to New Zealand.* As a result of the completion of the New Zealand branch of the Pacific cable in 1902, the rates charged for cablegrams between Australia and New Zealand, except to and from Tasmania, were uniformly reduced to fourpence-halfpenny per word. Between New Zealand and Tasmania the charge was fixed at fivepence-halfpenny a word, but it has since been reduced to fourpence-halfpenny. The charge for ordinary cablegrams from New Zealand to Great Britain was reduced from the 1st June, 1902, from five shillings and twopence to three shillings and fourpence a word, and has since been further reduced to three shillings a word.

10. Subsidised Press Cable Service.—In October, 1909, a Select Committee of the Commonwealth Senate was appointed to report upon the question of the supply, conditions of sale, and distribution, which control the Press Cable Service within and from outside the Commonwealth. A majority report of this Committee was issued in December, 1909, and recommended (a) the completion of an "All Red" cable route *via* Canada, (b) the conditional subsidisation of a press cable association, (c) the utilisation of the High Commissioner's office for the dissemination in Australia of Empire news, and (d) the amendment of the Copyright Act in regard to cables.

In accordance with the recommendations of this Committee the Commonwealth has granted a subsidy of £6000, extending over a period of three years, to the Independent Press Cable Service, on the conditions that at least 6000 cable words are supplied each week, to be sent *via* Pacific, and that any newspaper proprietary in the Commonwealth is permitted to become a subscriber at rates approved by the Government.

11. Cable Subsidies paid by each State.—The agreement between the State Governments and the Eastern Extension Telegraph Company expired on the 30th April, 1900. Since the year 1895 the amounts guaranteed—£237,736 to the company and £37,552 to South Australia—have been met by the receipts, and the contracting States have, therefore, not been called upon to contribute.

(i.) *Total Subsidies Paid.* The following table shews the total amounts paid by way of cable subsidies for the years 1907-8 to 1912-13:—

TOTAL AMOUNT OF CABLE SUBSIDIES PAID, 1907-13.

Year.			1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Amount	...	...	£ 28,937	28,495	23,862	20,093	17,522	14,779

(ii.) *Subsidies Paid by each State.* The total amount of cable subsidies paid prior to the year 1908-9 included the subsidy paid in respect of the Tasmania-Victorian cable service.

As the agreement in connection with the Tasmanian cable expired in 1909, and as new cables have been laid by the Commonwealth Government (see page 685 *ante*), the guarantees were, in the course of the year 1910, reduced to those in connection with the New Caledonia and Pacific cables. The amount of cable subsidies paid by the Commonwealth in 1912-13 was £4022 in respect of the New Caledonian cable guarantee, and £10,757 in respect of the loss on the Pacific cable.

§ 4. Telephones.

1. **Development of Telephone Services.**—The Postal Department has established telephone services in all the capital towns and in many of the important centres of population throughout the Commonwealth. Particulars as to the revenue from telephone services in each State for the years 1901 and 1909-13 are given on page 679 *ante*, while particulars of the expenditure on telephone works in each State for the year 1911-12 are given in a table on page 680.

(i.) *Number of Telephone Exchanges, etc., in Commonwealth.* The following table shews the number of telephone exchanges, the number of telephone connections, and the length of telephone wire, exclusive of telegraph and railway telephone wire, in the Commonwealth at the end of the year 1901 and from 1908 to 1912 inclusive:—

NUMBER OF TELEPHONE EXCHANGES AND CONNECTIONS AND LENGTH OF WIRE, 1901 and 1908-12.

Particulars.	1901.	1908.	1909.	*1910.	*1911.	1912.
Telephone Exchanges ... No.	119	235	328	678	927	1032
„ Connections ... „	24,583	54,512	62,091	74,975	85,458	95,965
Length of Wire ... miles	47,276	145,572	166,489	220,174	282,498	334,223

* Including all places at which two or more subscribers are connected and which are now classified as "telephone exchanges." Prior to 1910 the classification in the several States was not uniform.

(ii.) *Number of Telephone Exchanges, etc., in each State.* The following table gives corresponding particulars for each State at the end of 1912:—

TELEPHONE EXCHANGES, CONNECTIONS, AND LENGTH OF WIRE IN EACH STATE, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Tel. Exchanges* No.	385	264	162	93	65	63	1,032
„ Connections „	39,718	27,652	11,306	7,041	7,354	2,894	95,965
Length of Wire miles	108,870	150,104	28,251	21,927	21,571	3,500	334,223

* See note to previous table.

2. **Telephone Rates.**—The charges mentioned in the table hereunder are payable for the different classes of telephone services specified therein:—

TELEPHONES.—RENTAL CHARGES, 1912-13.

In Telephone Networks having a Population of—	Radius of Network with Main Exchange as Centre.	Minimum Annual Charge—		
		For an Exclusive Service.	For each Subscriber or Instrument on a Two-party Line.	For each Subscriber or Instrument on a Three or more party Service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000 ...	5	3 0 0	2 10 0	2 0 0
„ 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
„ 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

It is provided that for all effective calls originated the subscriber will be charged the following rates:—(a) For calls not exceeding 2000 half-yearly, two calls for one penny; and (b) for calls above 2000 half-yearly, three calls for one penny.

Another regulation permits persons occupying offices in the same building, or occupying the same private residence, to subscribe jointly under one exchange number (in addition to rental as for one person at the respective rates prescribed) on payment of

£1 per annum for each additional subscriber. This fee covers the insertion of the additional subscriber's name in the telephone list. If additional instruments are required the subscribers must pay the rates prescribed for party lines.

3. **Miscellaneous Particulars.**—The following table gives various interesting particulars of the operation of the telephone services in each State for the year 1912:—

PARTICULARS OF OPERATION OF TELEPHONE SERVICES, 1912.

Particulars.				N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	C'wth.
Telephone Exchanges*	...	...	No.	385	264	162	93	65	63	1,032
Public Telephones†	...	...	No.	818	560	350	370	183	383	2,664
Extension Lines—										
Metropolitan	...	...	No.	5,568	5,427	828	443	233	90	12,649
Country	...	...	No.	1,018	1,004	1,558	114	100	108	3,902
Total	...	...	No.	6,586	6,431	2,386	557	333	198	16,551
Private Lines—										
Metropolitan	...	...	No.	577	312	87	248	138	81	1,443
Country	...	...	No.	516	218	161	102	59	31	1,087
Total	...	...	No.	1,093	530	248	350	197	112	2,530
Connections—										
Subscribers' Lines	...	...	No.	38,900	27,092	10,719	6,866	7,029	2,769	93,375
Other Local Lines	...	...	No.	818	560	587	175	325	125	2,590
Total	...	...	No.	39,718	27,652	11,306	7,041	7,354	2,894	95,965
Telephone instruments in use—										
Subscribers' instruments	...	...	No.	46,666	33,215	13,070	9,692	8,837	3,297	114,777
Other Local instruments	...	...	No.	823	560	622	198	361	138	2,702
Total	...	...	No.	47,489	33,775	13,692	9,890	9,198	3,435	117,479
Rental received‡	...	...	£	\$	169,928	69,700	55,956	48,728	15,784	360,096
Length of wire opened during year...	Miles	7,630	34,363	2,938	4,781	1,998	432	52,142		
Total length of wire at end of year...	Miles	108,870	150,104	28,251	21,927	21,571	3,500	334,223		
Total cost to end of year	...	£	1,246,743	937,556	442,890	348,521	291,788	107,170	3,374,668	

* See note to first table on previous page. † Comprises slot machines within telephone networks. The information furnished under this heading for 1909 (see Year Book No. 4, page 793) included public telephone stations, i.e., trunk line offices. The latter have now been omitted, as it is thought that they do not rightly come under the heading of "public telephones." ‡ For the year ended 30th June, 1912. § Not available. || Exclusive of New South Wales.

In 1912 the mileage of telephone cables (aerial and underground) was 1607½, the length of telephone conduits in duct miles 1072.41, whilst the mileage of telephone tunnels was 12.3. The total mileage of telephone trunk lines for the Commonwealth for the same period was 45,448, of which number 12,717 were composed of single wire circuits, 13,551 metallic circuits, and 19,180 superimposed circuits.

4. **Financial Position of Telephone Branch.**—In 1909 an investigation into the financial position of the telephone branch of the Postmaster-General's Department was commenced, and in December of that year a report was issued dealing with the telephone accounts of the system in the State of Victoria. This report shews that during each of the years 1901 to 1908 there was a profit on the working of the system, amounting in all to £150,580; in the financial year 1908-9 there was a loss of £7789, giving a net profit up to the 30th June, 1909, of £142,791.

SECTION XIX.

COMMONWEALTH FINANCE.

§ 1. General.

1. Financial Provisions of the Constitution.—The main provisions of the Constitution as originally drafted relating to the initiation and development of the financial system of the Commonwealth are those contained in Chapter IV., "Finance and Trade," being sections 81 to 105 of the Constitution Act. Two other sections which have a most important bearing on questions of Commonwealth finance are sections 69 and 51.

2. Departments Transferred or Transferable under Constitution.—In section 69 it is provided that the Departments of Customs and Excise in each State should become transferred to the Commonwealth on its establishment, and that on a date or dates to be proclaimed by the Governor-General after the establishment of the Commonwealth the following departments should become transferred:—

- (i.) Posts, telegraphs, and telephones.
- (ii.) Naval and military defence.
- (iii.) Lighthouses, lightships, beacons and buoys.
- (iv.) Quarantine.

Under proclamation dated 12th February, 1901, and published in the Commonwealth *Gazette* of the 14th of that month, the Departments of Posts, Telegraphs, and Telephones in each State became transferred to the Commonwealth as from the 1st March, 1901, while under a similar proclamation dated 19th February, 1901, and gazetted on the 20th, the Departments of Naval and Military Defence in each State also became transferred to the Commonwealth as from 1st March, 1901. In the case of Quarantine, an Act (No. 3 of 1908) has been passed and control has been tentatively assumed by the Commonwealth.

The requisite proclamation of transfer has not yet been made in the case of departments dealing with "Lighthouses, lightships, beacons, and buoys," although legislation relative thereto has been passed by the Federal Parliament (Act No. 14, 1911). It is probable that the proclamation will be made at an early date.

3. Departments Transferable by Means of Commonwealth Legislation.—In addition to the departments here mentioned which pass to the Commonwealth either automatically or by proclamation, there are several others whose duties the Commonwealth is empowered to undertake after the passing by the Commonwealth of the legislation necessary to authorise the assumption of such duties. These are referred to in section 51 of the Constitution, which contains a statement of all matters respecting which power is (subject to the Constitution) conferred on Parliament "to make laws for the peace, order and good government of the Commonwealth." The matters contained in this section include those already mentioned as being covered by section 69. The principal matters involving for the due performance of the duties connected therewith the creation or transfer of departments of the Public Service are:—

- (i.) Trade and commerce.
- (ii.) Taxation.
- (iii.) Bounties on production or export of goods.

- (iv.) Postal, telegraphic, telephonic, and other like services.
- (v.) Naval and military defence.
- (vi.) Lighthouses, lightships, beacons, and buoys.
- (vii.) Astronomical and meteorological.
- (viii.) Quarantine.
- (ix.) Census and statistics.
- (x.) Bankruptcy and insolvency.
- (xi.) Copyrights, patents, and trade marks.
- (xii.) Naturalisation and aliens.
- (xiii.) Marriage.
- (xiv.) Divorce and matrimonial causes.
- (xv.) Invalid and old-age pensions.
- (xvi.) Immigration and emigration.
- (xvii.) Conciliation and arbitration.

4. Commonwealth Departments.—As a result of legislation passed from time to time in accordance with section 51, various departments and sub-departments have been transferred from the States to the Commonwealth, whilst other departments necessary for the due performance of the Commonwealth functions have been brought into existence. In the former class are such departments as those of Patents, Trade Marks, Copyrights, Designs, Naturalisation and Meteorology, while in the latter are the Ministerial Departments of External Affairs, Home Affairs, Treasury, Trade and Customs, Defence, Attorney-General and Postmaster-General, as well as such general departments as Public Service Commissioner's Office, Treasury, Audit Department, Crown Law Department, Bureau of Census and Statistics, Federal Land Tax Office, and Prime Minister's Office. It may, therefore, be said that, so far as its financial aspect is concerned, the effect of Federation up to the present time has been the transfer from States to Commonwealth of the revenue obtainable from the great revenue-producing Departments of Customs and Excise, and of the expenditure connected with various departments whose number is gradually increasing, and that, in addition, the various functions of the Commonwealth have necessitated further new expenditure.

5. Financial Relations between Commonwealth and States.—For the first ten years after Federation the financial relations between the Commonwealth and State Governments were regulated by section 87 of the Constitution, known generally as the "Braddon Clause." This provided that the Commonwealth should, until 31st December, 1910—and thereafter as long as Parliament should decide—retain for its own use an amount not exceeding one-fourth of the net revenue from Customs and Excise duties, the balance being returned to the States. The framers of the Constitution only contemplated a moderate Federal expenditure, and doubtless considered that one-fourth of the Customs and Excise revenue would be sufficient, as, indeed, it was in the earlier years. It began to be realised, however, later on, that if the Commonwealth was to undertake large national duties such as Defence, a largely increased expenditure must be faced. Consequently, on the expiry of the "Braddon Clause" in 1910, it was replaced by an agreement much more favourable to the Commonwealth. This agreement, known as the "Commonwealth Surplus Revenue Act 1910," was passed by the Fisher Administration for a period of at least ten years. It provided that the Commonwealth was to retain the whole of the Customs and Excise revenue, and to make to the Government of each State (by monthly instalments) an annual payment, equal to 25s. per head of the population of the State.

6. Special Assistance.—By the same Act provision was made that, during the period of ten years succeeding 1st July, 1910, a special payment should be made to Western Australia of an annual sum, starting at £250,000 for the first year, and progressively diminishing by £10,000 each subsequent year. One half of the amount was to be debited to all the States (including Western Australia) in proportion to population.

Assistance has also been granted to Tasmania, partly by means of the "Tasmania Grant Act of 1912," and partly by means of a special sum allocated by the Budget of 1913. According to the "Grant Act" a sum of £500,000 was set aside to be paid to

Tasmania by ten annual instalments, starting at £95,000, and progressively diminishing by £10,000 until £5000 is reached. In the Budget of 1913 a sum of £400,000 was allotted to Tasmania, to be paid in nine annual instalments, starting at £5000 and progressively increasing by £10,000 until the last payment, which will, however, be £80,000 instead of £85,000. As the result of these two grants Tasmania will have a first instalment of £95,000, then eight instalments of £90,000 each, and a final one of £85,000.

These concessions to Western Australia and Tasmania have been granted in consideration of the sacrifices made by these States, when yielding control of their Customs revenue to the Commonwealth. The whole question of the financial relations between the Commonwealth and States since Federation has been fully treated in the chapters on Commonwealth Finance, in all previous issues of the Year Book.

§ 2. Consolidated Revenue Fund.

(A) Nature of Fund.

The provisions made for the formation of a Commonwealth Consolidated Revenue Fund, and the means to be adopted for operating on that fund, are contained in sections 81, 82, and 83 of the Constitution. In section 81 it is provided that "All revenues or moneys raised or received by the Executive Government of the Commonwealth shall form one Consolidated Revenue Fund, to be appropriated for the purposes of the Commonwealth in the manner and subject to the charges and liabilities imposed by this Constitution." A strictly literal interpretation of this section would appear to require all loan and trust moneys received by the Commonwealth Executive to be paid to Consolidated Revenue. It is, however, held by Quick and Garran, in their "Annotated Constitution," that the "generic word *moneys* must be controlled by the preceding specific word *revenues*, and limited to moneys in the nature of revenue." This is the view of the matter which has been adopted by the Commonwealth Treasury in the preparation of its accounts. At present certain moneys received by the Commonwealth, which are not of the nature of revenue, are paid to Trust Account. As regards expenditure from the Consolidated Revenue Fund, section 82 provides that the costs, charges, and expenses incident to the collection, management, and receipt of the Consolidated Revenue Fund should form the first charge thereon, while section 83 stipulates that "no money shall be drawn from the Treasury of the Commonwealth except under appropriation made by law." Such appropriations are either special, and as such are provided for by means of a permanent Act, or are annual, and provided for in an annual Appropriation Act.

(B) Revenue.

1. **Total Collections.**—The consolidated revenue of the Commonwealth, which in 1901-2, the first complete financial year under the new régime, amounted to £11,296,985, had, in 1912-13, reached a total of £21,907,084, an increase in ten years of £10,610,099.

Particulars concerning the total amount of revenue collected by the Commonwealth Government from 1st July, 1908, to 30th June, 1913, are contained in the following table:—

CONSOLIDATED REVENUE OF THE COMMONWEALTH, 1908-9 to 1912-13.

	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Commonwealth ...	14,350,793	15,540,669	18,806,237	20,548,520	21,907,084

For 1908-9 the revenue was lower than that for the preceding year, but the total for the Commonwealth shews a substantial excess over any year prior to 1907-8. Since 1908-9 the revenue has increased steadily every year.

2. **Collections per Head.**—In the table given hereunder particulars are furnished of the amount of revenue per head of population collected in respect of the Commonwealth for the last five years:—

COMMONWEALTH REVENUE PER HEAD OF POPULATION, 1908-9 to 1912-13.

	1908-9.			1909-10.			1910-11.			1911-12.			1912-13.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Commonwealth ...	3	7	9	3	11	11	4	5	0	4	9	11	4	12	7

3. **Sources of Revenue.**—The following table furnishes particulars concerning the Commonwealth revenue derived from each source during the years 1908-9 to 1912-13 :—

SOURCES OF COMMONWEALTH REVENUE, 1908-9 to 1912-13.

Sources of Revenue.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Customs	8,626,521	9,505,855	10,507,080	12,071,434	13,055,925
Excise	2,217,546	2,087,310	2,473,364	2,638,702	2,497,109
Postal	3,409,426	3,731,741	3,906,015	3,916,254	4,226,313
Defence	5,024	21,847	57,520	74,298	39,193
Patents	15,367	16,644	21,295	19,051	18,355
Trade Marks, Copyrights, and Designs	6,110	4,790	5,265	5,639	5,637
Quarantine	...	4,724	7,068	9,875	13,162
Coinage	...	69,646	198,893	156,489	122,647
New revenue	35,978	63,076	...	...	...
Public Service Pension Funds, Repayments and Transfers	34,821	35,036	61,405	39,027	42,006
Land Tax	...	...	1,370,344	1,366,457	1,564,794
Northern Territory	...	...	10,521	31,225	40,084
Credit Balance Northern Territory Funds	...	...	151,513	...	24,456
Miscellaneous	...	...	35,954	220,039	257,403
Total	14,350,793	15,540,669	18,806,237	20,548,520	21,907,084

The only feature of this table calling for remark is the rapid annual rise of the Customs revenue since 1908-9. The Excise and Postal revenues have only shewn a comparatively small upward tendency during the period under review.

4. **Customs Revenue for Past Five Years.**—Particulars for the Commonwealth as a whole, for the five years 1908-9 to 1912-13, are furnished in the following table :—

COMMONWEALTH CUSTOMS REVENUE, 1908-9 to 1912-13.

Classes.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Stimulants	2,252,380	2,330,215	2,564,101	2,706,058	2,777,492
Narcotics	961,411	994,077	1,089,932	1,150,990	1,206,782
Sugar	140,343	506,385	170,822	275,077	691,568
Agricultural products	886,612	855,313	869,708	996,953	1,072,203
Apparel and textiles	1,630,490	1,872,832	2,068,922	2,385,786	2,367,945
Metals and machinery	932,944	997,973	1,264,986	1,554,983	1,639,749
Oils, paints, etc.	206,688	199,377	239,229	285,737	313,348
Earthenware, etc.	230,795	247,491	334,834	375,403	490,983
Drugs and chemicals	71,589	76,898	92,857	104,341	109,619
Wood, wicker, and cane	336,361	324,197	463,289	501,278	535,576
Jewellery, etc.	198,196	222,749	263,818	309,309	281,631
Leather, etc.	208,120	253,376	303,988	386,824	435,801
Paper and stationery	164,677	167,531	204,009	230,212	237,943
Vehicles	95,888	122,212	170,940	279,828	328,001
Musical instruments	72,128	82,949	109,423	176,009	165,839
Miscellaneous articles	205,697	220,580	258,953	313,505	361,350
Other receipts	32,202	31,700	37,269	39,141	40,095
Total Customs	8,626,521	9,505,855	10,507,080	12,071,434	13,055,925

It will be seen that throughout the period here dealt with, the Customs revenue from stimulants and narcotics has represented, approximately, one third of the total Customs revenue. The other principal articles from which Customs revenue was derived were "apparel and textiles," and "metals and machinery." The most marked increase in the amount of duty collected is in the class of "metals and machinery," the revenue under this head for 1912-13 exceeding that for 1908-9 by £706,805. The absolute increase in "apparel and textiles" is about the same, but the proportionate increase not so great.

5. Excise Collections, 1908-9 to 1912-13.—Particulars concerning the amount of Excise collected under each head during each of the years ending 30th June, 1909 to 1913, are given hereunder:—

COMMONWEALTH EXCISE REVENUE, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11	1911-12.	1912-13.
	£	£	£	£	£
Beer	551,859	584,503	617,178	694,001	718,869
Spirits	243,736	267,877	331,024	376,440	411,192
Starch	23,558	3,897	507	...	...
Sugar	750,776	548,716	794,645	748,670	518,508
Tobacco	638,017	673,437	720,305	810,242	840,012
Licenses	9,667	8,880	9,705	9,349	8,528
Agricultural machinery	Dr. 67	...	...	...	...
Total Excise ...	2,217,546	2,087,310	2,473,364	2,638,702	2,497,109

Comparing the Excise collections for 1912-13 with those for 1908-9 it will be seen that the increase in the revenue from tobacco was about 30 per cent., that from beer about 30 per cent., and that from spirits about 70 per cent., while sugar decreased 30 per cent., and decreases were also experienced in starch and licenses.

6. Commonwealth Taxation.—Under section 51, sub-section (ii.) of the Constitution, power is given to the Commonwealth Parliament to make laws with respect to taxation, but so as not to discriminate between States or parts of States. Section 90 of the Constitution makes the power of the Commonwealth Parliament to impose Customs and Excise duties an exclusive one, but it would appear that as regards all other forms of taxation the States and Commonwealth possess concurrent powers. The question of the imposition by the Commonwealth Parliament of direct taxes such as land and income taxes is one which has been the subject of considerable discussion, and the opinion has been expressed that the intention of the framers of the Constitution was that of restricting the powers of taxation of the Commonwealth to the imposition of Customs and Excise duties except in cases of great national peril. Whatever the intention of the framers may have been in this matter, the Constitution itself contains no such provision, and the Commonwealth Parliament is given an absolutely free hand in the imposition of taxation. Up to the end of the financial year 1909-10 the only taxes so levied were those of Customs and Excise, referred to in detail in the foregoing paragraphs. During the 1910 session of the Federal Parliament, however, an Act—assented to on 17th November, 1910—was passed, giving to the Commonwealth the power of levying a tax upon the unimproved value of all lands within the Commonwealth which were owned by taxpayers, and not specially exempted. Detailed reference to this Act will be found in Commonwealth Year Books Nos. 5 and 6.

7. **Commonwealth Land Tax.**—Particulars as to the Land Tax assessment for each State for the year ending 30th June, 1912, will be found in the following table :—

PARTICULARS OF LAND TAX ASSESSMENT FOR EACH STATE OF THE COMMONWEALTH FOR YEAR ENDING 30th JUNE, 1912.

State.	Unimproved Value as ascer- tained by Department.	Tax Assessed.		
		Town.	Country.	Total.
	£	£	£	£
New South Wales—				
Resident	80,484,921	226,449	476,554	703,003
Absentee	2,750,086	22,470	15,295	37,765
	83,185,007	248,919	491,849	740,768
Victoria—				
Resident	55,952,103	135,242	206,136	341,378
Absentee	2,022,772	20,600	8,333	28,933
	57,974,875	155,842	214,469	370,311
Queensland—				
Resident	14,412,259	40,557	71,286	111,843
Absentee	475,686	2,327	2,224	4,551
	14,888,945	42,884	73,510	116,394
South Australia—				
Resident	19,361,973	38,865	87,754	126,619
Absentee	590,980	3,101	4,294	7,395
	19,952,953	41,966	92,048	134,014
Western Australia—				
Resident	6,640,742	25,773	18,062	43,835
Absentee	425,983	2,212	1,158	3,370
	7,066,725	27,985	19,220	47,205
Tasmania—				
Resident	5,681,253	7,405	27,161	34,566
Absentee	289,392	454	1,548	2,002
	5,970,645	7,859	28,709	36,568
Grand Total—				
Resident	182,483,251	474,291	886,953	1,361,244
Absentee	6,555,899	51,164	32,852	84,016
	189,039,150	525,455	919,805	1,445,260

8. **Details of Postal Revenue, 1908-9 to 1912-13.**—Particulars concerning the postal revenue of the Commonwealth for each of the financial years from 1908-9 to 1912-13 are contained in the following table :—

COMMONWEALTH POSTAL REVENUE, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Private boxes and bags ...	17,548	19,078	20,993	23,383	25,618
Commission—					
Money orders & postal notes	100,034	104,457	112,568	121,432	129,653
Telegraphs ...	642,548	681,038	740,428	788,441	811,592
Telephones ...	441,551	509,623	518,857	752,423	860,726
Postage ...	2,111,333	2,253,500	2,363,385	2,088,866	2,260,000
Miscellaneous ...	96,412	164,045	149,784	141,709	138,724
Total ...	3,409,426	3,731,741	3,906,015	3,916,254	4,226,313

9. Revenue from Patents.—Under the Commonwealth Patents Act 1903, which was assented to on 22nd October, 1903, and came into force on 1st June, 1904, the complete control of the Patents administration of Australia passed from the several State Governments to that of the Commonwealth, which, under section 19 (a) of the Act mentioned, was authorised to collect for each State the fees to which it was entitled under the State Act in respect of proceedings then pending.

The revenue collected since the financial year 1908-9 is shewn in the following table:—

COMMONWEALTH PATENTS REVENUE, 1908-9 to 1912-13.

	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Revenue ...	15,367	16,644	21,295	19,081	18,355

10. Revenue from Trade Marks, etc.—Under the several Acts of the Commonwealth Legislature relating to trade marks, copyrights, and designs, the Commonwealth Government has assumed the exclusive administration of such matters, and now collects all revenue accruing therefrom. The following table gives particulars of the amounts since this item first appeared in the Commonwealth accounts:—

COMMONWEALTH TRADE MARKS, COPYRIGHTS AND DESIGNS REVENUE,
1908-9 to 1912-13.

	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Revenue ...	6,110	4,790	5,265	5,639	5,637

11. Defence Revenue.—The revenue appearing under the head of "Defence" comprises the receipts derived from the sale of stores and clothing, from fines, etc., and for 1912-13 amounted to £39,193.

12. Coinage.—The revenue for the Commonwealth under this head is derived from the profit on coin issued, and is made up of £116,831 from silver coin and £5816 from bronze coin.

(C) Expenditure.

1. Nature of Commonwealth Expenditure.—The disbursements by the Commonwealth Government of the revenue collected by it fell naturally, under the "book-keeping" system, into three classes, viz.:—

For a discussion of the "book-keeping system" see Commonwealth Year Book, No. 6, p. 780.

- (a) Expenditure on transferred services.
- (b) Expenditure on new services.
- (c) Payment to States of surplus revenue.

Of these three, only the first two were actual expenditure, the last being merely a transfer, the actual expenditure being incurred by the States. In accordance with the provisions of the Constitution the expenditure on transferred services was, under the "book-keeping" system, debited to the several States in respect of which such expenditure was incurred, while the expenditure on new services was distributed *per capita*. Surplus Commonwealth revenue was paid to the States monthly. During the earlier years of Federation, viz., until the end of the year 1908-9, new works, etc., for transferred departments were treated as transferred expenditure, and were charged to the States on whose behalf the expenditure had been incurred. In subsequent years all such expenditure was regarded as expenditure on new services, and was distributed amongst the States *per capita*. Under the new system of keeping the accounts there is no further debiting of expenditure to the several States.

2. **Total Expenditure.**—The total expenditure by the Commonwealth Government during the period 1908-9 to 1912-13 is shewn in the following table:—

COMMONWEALTH EXPENDITURE, 1908-9 to 1912-13.

	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Commonwealth ...	6,420,398	7,499,516	13,158,529	14,724,097	15,787,154

The expenditure for 1912-13 was higher than that for any preceding year, and was considerably higher than the expenditure for 1908-9.

3. **Expenditure per Head.**—Particulars concerning the Commonwealth expenditure per head are furnished hereunder:—

COMMONWEALTH EXPENDITURE PER HEAD, 1908-9 to 1912-13.

	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Commonwealth ...	1 10 4	1 14 8	2 19 6	3 4 6	3 6 8

4. **New Works, etc.**—As previously mentioned, the Commonwealth expenditure on new works, etc., for transferred departments was, prior to 1904-5, included under the head of "transferred" expenditure, but in that and subsequent years up to 1909-10 has been treated as "other" expenditure, and debited to the States *per capita*. Particulars of the expenditure on new works, etc., during the last five years are given in the following table:—

COMMONWEALTH EXPENDITURE ON NEW WORKS, etc., 1908-9 to 1912-13.

Departments.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13*.
	£	£	£	£	£
Trade and Customs ...	20,019	5,124	...	...	...
Defence ...	101,020	337,961	...	...	...
Postal ...	541,809	555,557	...	...	...
Sundry departments ...	4,339	2,526	2,452,960	3,566,367	2,653,282
Total ...	667,187	901,168	2,452,960	3,566,367	2,653,282

* In addition, the following amounts were spent from Trust Funds:—£475,342 for Fleet construction, and £413,097 for Telegraphs and Telephones.

It will be seen that the Commonwealth expenditure under this head has increased considerably in recent years, the total for 1912-13 being about four times as great as that for 1908-9. The main cause of the great increase in recent years is the large expenditure on fleet construction.

5. **Cost of Departments, etc.**—Arranged in such a manner as to shew under each Department the expenditure on behalf of that Department, the cost of the several branches of the Commonwealth service for the years 1908-9 to 1912-13 was as follows:—

COST OF COMMONWEALTH DEPARTMENTS, etc., 1908-9 to 1912-13.

Departments, etc.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Governor-General ...	22,554	21,908	20,884	23,842	21,648
Parliament ...	163,991	220,233	211,558	189,550	281,261
Prime Minister ...	...	...	...	14,863	57,559
External Affairs ...	53,513	80,469	454,128	494,010	539,722
Attorney-General ...	32,027	32,349	35,329	62,899	66,517
Home Affairs ...	110,291	88,112	179,097	155,628	129,972
Treasury ...	34,473	74,108	1,960,318	2,368,506	2,910,224
Trade and Customs ...	837,741	777,788	1,051,497	1,024,389	875,784
Defence ...	1,050,590	1,534,881	1,395,798	2,128,649	2,612,687
Postmaster-General ...	3,625,402	3,786,755	3,559,785	4,330,896	4,781,524
All other Expenditure ...	499,816	682,913	4,290,135	3,990,865	3,510,256
Total ...	6,420,398	7,499,516	13,158,529	14,724,097	15,787,154

The largeness of the expenditure under the head of Parliament in the years 1909-10 and 1912-13 was in great measure due to the fact that the general elections were held in those years, while the expenditure in connection with the sugar bounties is mainly responsible for the variations which have taken place in the cost of the Department of Trade and Customs. The amount paid in Old-Age and Invalid Pensions is included in Treasury expenditure for the first time in 1910-11. It may be noted that the great increase in the item "all other expenditure." for the year 1910-11 and subsequent years, is owing to the inclusion for the first time of the expenditure on "new works," which had formerly been debited to the departments in which it had been incurred. More detailed reference to the items included under the above general heads is furnished in the succeeding paragraphs.

6. **Governor-General.**—In section 3 of the Constitution it is enacted that, until the Commonwealth Parliament otherwise provides, there shall be payable out of the Consolidated Revenue Fund for the salary of the Governor-General an annual sum of ten thousand pounds, and a proviso is made that the salary of the Governor-General shall not be altered during his continuance in office. The total expenditure in connection with the Governor-General and his establishment for the five years 1908-9 to 1912-13 is as follows:—

EXPENDITURE, GOVERNOR-GENERAL AND ESTABLISHMENTS, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Salary ...	10,000	10,000	10,000	9,973	10,000
Repairs, etc., Government Houses ...	8,941	7,754	6,848	10,113	6,983
Contingencies ...	3,613	4,154	4,036	3,756	4,665
Total ...	22,554	21,908	20,884	23,842	21,648

7. **Parliament.**—Under this head have been grouped all the items of expenditure connected with the Parliamentary Government of the Commonwealth, including the

salaries of the Ministers and the allowances to senators and members of the House of Representatives. Details for the five years 1908-9 to 1912-13 are furnished in the table given hereunder:—

EXPENDITURE, COMMONWEALTH PARLIAMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Salaries of Ministers	12,000	12,000	12,000	12,000	12,000
Allowances to Senators	20,406	21,368	21,519	20,997	20,950
Allowances to Members of House of Representatives	43,418	37,112	43,205	43,257	39,198
Officers, staff, contingencies, etc.	30,127	31,458	30,938	30,985	32,873
Repairs, maintenance, etc.	2,178	2,636	1,939	1,814	3,172
Printing	13,400	15,660	16,507	16,829	19,341
Travelling expenses of Members and others	8,841	9,767	9,153	10,029	9,252
Insurance	342	342	342	342	342
Electoral Office	6,002	6,191	5,288	5,578	6,764
Election expenses	54	49,958	5,364	1,435	82,370
Referendum	...	...	47,487	4,183	...
Administration of Electoral Act	27,223	33,602	17,437	39,863	54,441
Miscellaneous	...	139	379	2,238	558
Total	163,991	220,233	211,558	189,550	281,261

In section 66 of the Constitution provision is made that there shall be payable out of the Consolidated Revenue Fund of the Commonwealth, for the salaries of Ministers of State, an annual sum which, until Parliament otherwise provides, shall not exceed £12,000. This provision is still in force. Allowances to senators and members of the House of Representatives are also provided for in the Constitution, section 48 of which specifies that until Parliament otherwise provides each such allowance shall consist of £400 a year, reckoned from the day on which the member takes his seat. During the second session of the Commonwealth Parliament in 1907 the question of allowances to members was under consideration, and an Act was passed raising the annual allowance from £400 to £600, such increase to date from 1st July, 1907.

8. Prime Minister's Department.—This is a new department created during the financial year 1911-12. In addition to the Prime Minister's Office it includes the Audit Office taken from the Treasury, the Executive Council taken from the External Affairs Department, and the Public Service Commissioner's Office taken from the Home Affairs Department. The expenditure on the Prime Minister's Department for the financial year ended 30th June, 1913, included the following items:—Prime Minister's Office, £21,685; Audit Office, £10,663; Public Service Commissioner's Office, £20,683; Executive Council, £128; Rent, Repairs, and Miscellaneous, £4400; total, £57,559. The Public Service Commissioner's Office is included for the first time, and is the principal factor in the largely increased expenditure on the department.

9. External Affairs.—Under the control of the Department of External Affairs is placed the expenditure in connection with the London Office, Papua and the Northern Territory. The expenditure in connection with the Northern Territory is exclusive of the Customs and Postal expenditure. Particulars for the five years 1908-9 to 1912-13 are as follows:—

EXPENDITURE, EXTERNAL AFFAIRS DEPARTMENT, 1908-9 to 1912-13.

Details	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
High Commissioner ...	...	...	3,000	3,000	3,000
Chief Office ...	11,329	13,882	13,862	15,684	16,486
Executive Council ...	970	781	737	...	...
London Office ...	3,650	4,647	17,286	14,282	21,351
Papua ...	22,100	28,549	30,615	30,280	64,987
Rents, repairs, etc. ...	541	820	655	1,298	1,500
Northern Territory ...	...	...	326,347	248,758	281,140
Port Augusta Railway ...	...	...	...	119,426	85,965
Miscellaneous ...	14,923	31,790	61,626	61,282	65,293
Total ...	53,513	80,469	454,128	494,010	539,722

10. **Northern Territory.**—The Department of External Affairs assumed control of the administration of the Northern Territory from 1st January, 1911, and separate accounts were issued for the first time in the Treasurer's statement for the financial year ending 30th June, 1911. The chief sources of revenue for the year ending 30th June, 1913, were the Customs and Excise, amounting to £12,337, and Railways £13,747. The Postal revenue amounted to £4071, whilst the total revenue was £80,951, inclusive of £24,456 credit balance of Northern Territory funds. The chief items of expenditure were as follows:—Postal Department, £16,761; goldfields and mining, £14,964; railways, £17,963; and police, £10,609. The total expenditure was £242,048. In addition to this expenditure the Commonwealth is liable for interest on loans and redemption, which for this financial year totalled £227,561. The deficiency for the year was £388,658.

11. **Papua.**—The sums shewn in the above table as expenditure in connection with Papua represent the Commonwealth grants towards the cost of administering that territory, as well as certain additional amounts. The ordinary revenue and expenditure of Papua are kept distinct from those of the Commonwealth. Apart from the Commonwealth contribution, the principal source of revenue is the Custom House. Details for the five years 1908-9 to 1912-13 are as follows:—

PAPUAN REVENUE, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Customs dues ...	20,758	24,901	32,554	37,751	33,453
Other collections ...	6,948	11,017	13,418	13,284	18,882
Commonwealth grant ...	23,000	26,000	30,000	30,000	48,000*
Total ...	50,706	61,918	75,972	81,035	100,335

* Including £18,000 for special purposes.

One of the largest items of Papuan expenditure is the maintenance, etc., of vessels and boats, including the steam yacht "Merrie England," the total outlay under this head for 1912-13 being no less than £8365. The expenditure on public justice for 1912-13 totalled £24,779, comprising "magistrates, etc.," £13,235; "armed native constabulary," £8033, and "gaols," £3511. The total expenditure for each of the five years 1908-9 to 1912-13 was as follows:—

PAPUAN EXPENDITURE, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Total expenditure ...	51,036	64,874	70,699	85,636	89,170

12. **Attorney-General's Department.**—The extra expenditure connected with this Department from 1907-8 was brought about in large measure by the extension of the Federal High Court, the total cost of which, including the Court of Conciliation and Arbitration, for the year 1912-13, amounted to £28,024. The expenditure on Patents, Trade Marks, Copyrights, and Designs was included for the first time in 1911-12. Details for the five years 1908-9 to 1912-13 are furnished hereunder:—

EXPENDITURE, ATTORNEY-GENERAL'S DEPARTMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Attorney-General's Office ...	3,705	3,684	3,805	4,449	5,279
Crown Solicitor's Office ...	3,242	3,458	4,472	4,829	6,046
Salaries of Justices of High Court ...	15,500	15,500	15,500	15,500	16,495
High Court expenses ...	6,791	6,888	7,459	6,772	6,839
Court of Conciliation and Arbitration ...	1,746	1,289	2,891	4,047	4,690
Rent, repairs, etc. ...	1,043	1,530	1,202	3,411	3,745
Patents, Trade Marks, etc. ...	...	...	...	23,291	22,768
Miscellaneous ...	...	...	...	600	655
Total ...	32,027	32,349	35,329	62,899	66,517

13. **Home Affairs Department.**—The creation of new departments such as the Bureau of Census and Statistics, and the Meteorological Bureau, and the extension of the field of operations of the Public Works branch, all of which are grouped for general administrative purposes under the Department of Home Affairs, have led to a considerable increase in the expenditure. The heaviness of the expenditure of this department for 1908-9 was, in a large measure, due to the cost incurred by the Commonwealth in connection with the reception of the American fleet; whilst that of 1910-11 was mainly due to the appropriation for the census. Particulars for the five years 1908-9 to 1912-13 are as follows:—

EXPENDITURE, HOME AFFAIRS DEPARTMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Chief Office ...	10,383	11,454	14,178	15,684	22,606
Public Service Commissioner ...	15,636	15,952	16,989	17,881	*
Public Works ...	15,686	17,738	11,505	17,192	26,054
Census and Statistics ...	12,394	15,137	106,567	68,857	29,886
Meteorological Bureau ...	16,818	16,414	17,389	22,389	22,729
Rents, repairs, etc. ...	5,039	5,882	4,845	6,111	7,796
Reception of United States Fleet ...	32,580	...	...	...	...
Miscellaneous ...	1,755	5,535	7,624	7,514	20,901
Total ...	110,291	88,112	179,097	155,628	129,972

* Now included in Prime Minister's Department.

14. **Treasurer's Department.**—The sub-departments under the control of the Commonwealth Treasurer are the Treasury, the Old Age Pensions Department, and

the Land Tax Office. The Audit Office was transferred to the Prime Minister's Department in 1911-12. During the financial year 1908-9 the expenditure under this department was swelled by a donation of £10,000 to the Sicily Earthquake Relief Fund, and in 1909-10 by the increased expenditure on salaries, etc., in the Old Age Pensions Department. The statements in previous Year Books, up to No. 5 inclusive, have been rearranged so as to include expenditure on Invalid and Old Age Pensions from 1908-9; consequently, from that year onward until 1910-11 the amounts given below differ from those on page 700 by the item "Invalid and Old Age Pensions." Details of the expenditure of this department for each of the five years 1908-9 to 1912-13 are furnished hereunder:—

EXPENDITURE, TREASURER'S DEPARTMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Treasury	11,113	11,862	12,273	13,708	17,052
Old-age pensions—Salaries, etc. ...	2,297	36,423	37,492	39,810	42,543
Audit	7,996	8,593	8,819	...	...
Rents, repairs, etc.	1,884	3,410	5,293	7,206	7,101
Donation to Sicily earthquake relief funds	10,000	...	...	...	...
Invalid and Old-age pensions	462,528	841,181	1,874,568	2,143,212	2,288,388
Land Tax	...	...	...	60,686	73,452
Maternity Allowance	...	...	...	...	412,375
Miscellaneous	1,183	13,820	21,873	43,884	69,813
Total	497,001	915,289	1,960,318	2,308,506	2,910,224

15. **Trade and Customs.**—Under this head have been included the expenditure of all the sub-departments under the control of the Minister of Trade and Customs, as well as the amounts payable as sugar and other bounties and the expenses in connection therewith. The Administration of Patents, Trade Marks, and Copyright is now entrusted to the Attorney General's Department. The large divergencies in the total expenditure which these figures exhibit for recent years have been mainly due to variations in the amount payable in respect of sugar bounties. Particulars for the five years 1908-9 to 1912-13 are given in the following table:—

EXPENDITURE, TRADE AND CUSTOMS DEPARTMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Chief Office	12,223	11,954	13,260	12,698	13,582
Customs (ordinary)	256,937	255,779	286,410	301,278	347,657
Patents	14,245	19,284	20,140	...	...
Trade Marks and Copyrights	3,655	...	...	...	...
Fisheries	3,110	5,605	5,354	6,688	6,754
Analyst	2,010	1,995	2,511	3,235	2,523
Audit (proportion)	7,019	7,426	7,281	7,057	7,763
Quarantine	808	23,355	21,246	22,973	23,371
Pensions and retiring allowances	6,787	8,058	10,308	12,049	14,099
Rents, repairs, etc.	9,932	9,994	12,068	17,969	13,371
Sugar bounties and expenses	483,707	407,777	630,762	543,503	370,125
Bounties	2,633	5,885	11,740	22,941	18,171
New works, etc.	20,019	5,124	...	...	...
Iron Bonus	3,648	32,579	29,427	23,048	18,098
Miscellaneous	14,656	15,552	990	50,950	40,270
Total	841,389	810,367	1,051,497	1,024,389	875,784

16. **Defence.**—The Commonwealth expenditure in connection with Defence, which in 1901-2 amounted to £861,218, had by 1908-9 grown to £1,050,590. A slight fall was experienced in 1910-11 owing to the loss of the item "new works." The largeness of the expenditure for recent years has been in the main the consequence of the new defence system. Particulars for the five years 1908-9 to 1912-13 are as follows:—

EXPENDITURE, DEFENCE, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Chief Office	23,884	26,366	32,609	54,004	74,480
Military	625,600	853,420	1,040,981	1,409,398	1,557,443
Naval	259,251	263,143	273,076	449,701	1,790,750
Audit (proportion)	960	954	1,142	1,180	1,298
Pensions and retiring allowances	1,017	781	965	2,269	1,121
Rents, repairs, etc.	29,798	29,621	42,863	46,257	58,746
New works, etc.	101,020	337,961	...	...	...
Miscellaneous	9,060	22,635	4,162	165,840	128,849
Total	1,050,590	1,534,881	1,395,798	2,128,649	2,612,687

17. **Postal.**—From a total of £3,625,402 in 1908-9 the cost of the department under the control of the Postmaster-General advanced to £4,781,524 in 1912-13, an increase of £1,156,122. Details for the five years 1908-9 to 1912-13 are furnished hereunder:—

EXPENDITURE, POSTAL DEPARTMENT, 1908-9 to 1912-13.

Details.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Chief Office	10,780	12,324	14,208	18,515	20,154
Postal Department (ordinary) ...	2,986,992	3,123,357	3,441,720	3,796,157	4,145,803
Audit (proportion)	2,393	2,398	2,704	2,894	3,184
Pensions and retiring allowances ...	26,186	32,083	31,209	36,812	42,757
Rents, repairs, etc.	51,454	54,484	62,454	72,222	84,883
New works, etc.	541,809	555,557	...	...	...
Miscellaneous	5,788	6,552	7,490	404,296	484,743
Total	3,625,402	3,786,755	3,559,785	4,330,896	4,781,524

18. **Interest on Transferred Properties.**—At the time of Federation, when the Commonwealth undertook control of a great many departments which had previously been worked by the States, a great deal of property was handed over to the Commonwealth Government. This consisted mainly of Post Offices, Customs Houses, Defence works, and other buildings necessary to the effective working of the transferred departments. In the early days of the "Braddon Clause," when the Commonwealth Government was spending less than its statutory proportion of the Customs revenue, the question of suitable compensation to the States did not become acute; but, when the "Braddon Clause" was replaced by another arrangement between Commonwealth and States, much less favourable to the latter, the matter was put upon a more definite footing. In the Commonwealth accounts for 1911-12 and 1912-13, definite amounts (independent entirely of the subsidy) have been paid to the States under the heading "Interest on Transferred Properties." These amounts have been substantially based upon a valuation, made by the Home Affairs Department, with the following result:—

VALUATION OF TRANSFERRED PROPERTIES.

STATES.				DEPARTMENTS.			
		£				£	
New South Wales	...	...	3,674,648	Postmaster-General	...	6,253,888	
Victoria	...	...	2,330,174	Defence	...	2,721,666	
Queensland	...	...	1,521,868	Trade and Customs	...	661,160	
South Australia	...	...	1,032,722	Home Affairs	...	11,735	
Western Australia	...	...	704,286				
Tasmania	...	...	384,751				
Total	...	...	£9,648,449	Total	...	£9,648,449	

Since the valuation a few transfers and re-transfers have been made. Making allowances for these, the following tables shew particulars of the payments made:—

STATES.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Totals.
	£	£	£	£	£	£	£
Interest—							
Calculated on original valuation	385,838	244,668	159,796	108,436	73,950	40,399	1,013,087
Added for further transfers	71	381	...	...	...	...	452
	385,909	245,049	159,796	108,436	73,950	40,399	1,013,539
Deducted for properties re-transferred	300	407	639	271	2,837	42	4,496
Balance due 30th June, 1913	385,609	244,642	159,157	108,165	71,113	40,357	1,009,043
Paid during year 1911-12	220,296	138,941	90,781	61,769	36,147	23,061	570,995
Paid during year 1912-13	165,313	105,701	68,376	46,396	34,966	17,296	438,048

DEPARTMENTS.

Particulars.	Postmaster-General.	Defence.	Trade and Customs.	Home Affairs.	Totals.
	£	£	£	£	£
Interest—					
Calculated on original valuations	656,658	285,775	69,422	1,232	1,013,087
Added for further transfers	377	59	16	...	452
	657,035	285,834	69,438	1,232	1,013,539
Deducted for properties re-transferred	3,291	1,141	64	...	4,496
Balance due to 30th June, 1913	653,744	284,693	69,374	1,232	1,009,043
Paid during year 1911-12	368,645	162,131	39,515	704	570,995
Paid during year 1912-13	285,099	122,562	29,859	528	438,048

Interest has been paid as from 1st July, 1910. In the year 1911-12, interest at the rate of 3 per cent. for two years was paid. In the year 1912-13, interest at the rate of $3\frac{1}{2}$ per cent. was paid, together with two yearly payments at the rate of $\frac{1}{2}$ per cent., thus completing payment for the full period at the rate of $3\frac{1}{2}$ per cent.

19. **Miscellaneous.**—In addition to the foregoing there are certain items which do not come under any of the heads enumerated. For 1912-13 the total expenditure under this heading was £3,510,256, made up of £2,653,282 for new works, and a payment of £856,974 into the trust fund for the purpose of old-age pensions. The entire expenditure for new works now appears as a separate item instead of being debited to the different departments.

(D) Subsidy Paid to States.

1. **Net Revenue.**—As mentioned in sub-section 1 of this section, the Constitution provided under sections 87, 93 and 95 for the payment to the States of all surplus revenue of the Commonwealth, such payment to amount in the aggregate during the continuation of the Braddon clause to not less than three-fourths of the net revenue from Customs and Excise. The expression "net revenue" used in section 87 has been taken to mean the gross revenue less drawbacks and refunds, and less also cost of collection. This view, adopted by the Commonwealth Government, was that indicated by Quick and Garran in their "Annotated Constitution of the Australian Commonwealth," in which they say: "The net revenue from duties of Customs and Excise is the total receipts from these sources after deducting the cost of collection. No attempt was made in the Constitution to define the deductions which may be made in order to arrive at the net revenue; this is a matter of book-keeping, which is left wholly to the Executive Government." In actual practice the statutory three-fourths of net Customs and Excise revenue was ascertained by the Commonwealth Treasury by deducting from the total Customs and Excise revenue (less drawbacks and refunds) the "transferred" expenditure of the Department of Trade and Customs and the expenditure on new works for that department, and taking three-fourths of the result.

2. **Payments to the Several States.**—In the following table are furnished particulars relative to the amounts actually paid to the several States on account of each of the financial years 1908-9 to 1912-13:—

COMMONWEALTH SUBSIDY PAID TO STATES, 1908-9 to 1912-13.

State.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
New South Wales ...	3,326,276	3,480,314	1,954,986	2,046,993	2,178,683
Victoria ...	1,987,435	2,109,379	1,617,572	1,667,657	1,692,121
Queensland ...	1,027,047	1,099,383	691,625	761,302	780,051
South Australia ...	716,957	842,508	514,622	511,719	527,151
Western Australia ...	627,933	707,672	591,243	599,991	605,215
Tasmania ...	244,747	253,180	233,143	236,761	*241,709
Total ...	7,930,395	8,492,436	5,603,191	5,824,423	*6,024,930

* Not including special grant of £95,000 to Tasmania.

For 1908-9 the surplus revenue paid to the States was lower in all cases than that for 1907-8. This was due in part to the fact that the 1907-8 payments were somewhat abnormal, and in part to the retention by the Commonwealth in 1908-9 of all revenue in excess of the statutory three-fourths of net Customs and Excise Revenue. In 1909-10 the surplus revenue returned to the States was higher in every case than in 1908-9. In 1910-11, owing to the new system of allotting the Commonwealth subsidy, the amounts received by each State were the smallest for the period under review, but they all rose, with the exception of South Australia, in 1911-12, and again, without exception, in 1912-13. The amount allotted to Tasmania is exclusive of the first instalment of the special payment to which reference has already been made (see page 693).

3. **Commonwealth Subsidy per head of Population.**—The following table furnishes particulars concerning the amount of surplus Commonwealth revenue per head of population which the several States received during the financial years 1905-6 to 1909-10, and is of interest in connection with the new financial agreement, under which the Commonwealth pays 25s. per head of population, to all the States, for a period of ten years, subject to a special arrangement in favour of Western Australia. (See page 693.)

COMMONWEALTH SUBSIDY PER HEAD OF POPULATION PAID TO STATES.
1905-6 to 1909-10.

State.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
New South Wales ...	1 16 10	1 19 9	2 6 4	2 2 0	2 3 1
Victoria ...	1 14 7	1 16 1	1 18 7	1 11 9	1 13 0
Queensland ...	1 12 3	1 14 10	1 18 1	1 16 10	1 18 1
South Australia ...	1 10 8	1 14 10	2 1 11	1 16 10	2 2 6
Western Australia ...	3 9 9	3 0 9	2 19 1	2 8 4	2 13 3
Tasmania ...	1 7 5	1 8 2	1 9 6	1 5 6	1 6 3
Commonwealth ...	1 16 8	1 18 4	2 2 7	1 17 6	1 19 3

4. **Proportion Actually Paid.**—For the period of nine and a-half years from the 1st January, 1901, to 30th June, 1910, the percentage of net revenue from Customs and Excise duties paid to the several States was as follows:—New South Wales, 84 per cent.; Victoria, 80 per cent.; Queensland, 74 per cent.; South Australia, 84 per cent.; Western Australia, 86 per cent.; Tasmania, 78 per cent.

§ 3. Trust Fund.

1. **Trust Accounts.**—The Trust Fund credit balance on 30th June, 1913, amounted to £13,838,381, as compared with £14,255,098 for the corresponding date in the year ending 30th June, 1912. These enormous amounts are due mainly to the Australian Notes Account referred to in detail in paragraph 3. Details concerning the various trust accounts contributing to this amount are as follows:—

COMMONWEALTH TRUST FUND, 30th JUNE, 1913.

Trust Accounts.	Balance at 30th June, 1913.	Trust Accounts.	Balance at 30th June, 1913.
	£		£
Small Arms Ammunition ...	50,841	Officers' Assurance... ..	1,477
Defence Clothing Material ...	41,885	Defalcations	42
Small Arms... ..	4,531	Guarantee Fund	3,684
Unclaimed Militia Pay—military	2,092	Repatriation of Pacific Islandrs	40
" " naval	385	London Liabilities	1,281,114
Military Expenses	6,861	Minerals Account	2,231
Customs Officers' Overtime ...	972	Quarantine	26
Money Order	40,000	Naval Defence	721,487
International Postal & Money		Australian Notes Account ...	9,465,256
Order	15,007	Other Trust Moneys	189,478
Invalid and Old Age Pensions...	2,010,518		
Papua	454		
		Total	13,838,381

2. **Distribution.**—The amounts to credit of Trust Fund in the several States on 30th June, 1913, were as follows :—New South Wales, £671,479 ; Victoria, £12,213,206; Queensland, £250,731; South Australia, £269,264 ; Western Australia, £256,148 ; and Tasmania, £177,553.

3. **Australian Notes Account.**—After the passage of the Australian Notes Act, Australian notes began to appear in circulation in December, 1910. For the first half of the calendar year 1911, they circulated side by side with bank notes and Queensland Treasury notes. After 30th June, 1911, the penal clauses of the Notes Act came into operation and the banks and the Queensland Government began to withdraw their notes from active circulation. By the end of the year the process was virtually complete. On 30th June, 1913, the notes issued and unredeemed amounted to £9,163,518. Against this there was a reserve in gold coin of £3,732,557 and other assets, of which the most important were investments in Government Stock and fixed deposits, totalling £5,720,000, and returning an annual income of £216,600.

The position, according to a Treasury return issued at the end of February, 1914, was as follows :—

COMMONWEALTH NOTES ISSUED AND UNREDEEMED AT 25th FEBRUARY, 1914.

	£	s.	d.
10s.	22,874	10	0
£1	3,068,570	0	0
£5	3,430,365	0	0
£10	1,702,210	0	0
£20	365,440	0	0
£50	852,200	0	0
£100	465,600	0	0
	9,907,259	10	0

The amount of the gold reserve was £4,440,290, representing 44.82 per cent. of the liability. Out of this amount of Commonwealth notes the banks hold about £5,000,000, the balance being in active circulation.

The subject is also dealt with at some length in Section XXI., Sub-section 2, Banking.

4. **Advances by Commonwealth Government to States.**—Reference has been made in the previous paragraph to the investments of the gold reserve from the Australian Notes Account. A large proportion has been advanced to the respective State Governments for short periods, sometimes as low as one year. This is a novel and interesting departure in Australian Public Finance, and in view of the new financial relations thus brought about between the Commonwealth and State Governments, the following table is appended, giving full particulars of the investments of £5,720,000, to which reference has already been made:—

**AUSTRALIAN NOTES ACCOUNT.—PARTICULARS OF INVESTMENT AS AT
30th JUNE, 1913.**

Particulars.	Amount.	Rate of Interest.	Date of Maturity.	Annual Amount of Interest.
STATE GOVERNMENT SECURITIES	£	%		£
New South Wales Funded Stock	1,000,000	3½	10/8/19	37,500
Victorian Government Debentures	980,000	3½	1/5/21	35,000
Western Australian Stock	650,000	3½	1/9/26	24,375
" " Treasury Bills	100,000	4	15/4/14	4,000
Tasmanian Inscribed Stock	200,000	3½	1/4/21	} 18,750
" " " " " "	300,000	3½	1/10/21	
FIXED DEPOSITS—				
New South Wales Government	800,000	4	13/6/14	32,000
" " " " " "	200,000	4	21/6/14	8,000
" " " " " "	100,000	3½	17/9/13	3,500
" " " " " "	100,000	3½	17/10/13	3,500
" " " " " "	100,000	3½	17/11/13	3,750
" " " " " "	100,000	3½	17/12/13	3,750
Queensland Government	840,000	4	5/3/14	33,600
Commonwealth Bank	50,000	3½	30/6/14	1,750
" " " " " "	50,000	3½	31/7/14	1,750
" " " " " "	50,000	3½	31/8/14	1,750
" " " " " "	50,000	3½	30/9/14	1,750
Brisbane Bank	25,000	4	20/1/14	1,000
Launceston Bank	25,000	3½	16/8/13	875
Total	5,720,000	—	—	216,600

In addition to the amounts which appear in this table the Commonwealth Government has made further advances to the States from other Trust Funds. The total amount advanced to the States at 30th June, 1913, was £6,780,000, returning interest to the extent of £259,625.

§ 4. Commonwealth Public Debt.

Although the Federal Government has never gone to the public as a borrower there still exists a Commonwealth debt. The first portions were contracted at the beginning of 1911, when the Federal Government assumed responsibility for the outstanding liabilities of the Northern Territory and the Port Augusta-Oodnadatta Railway. Another item was added to the list later on in the year by the passage of two Acts (Nos. 20 and 24 of 1911), relating to the issue of Inscribed Stock, the former being permissive, and the latter specifying the fixed sum of £2,460,476. This amount was to be raised for the following purposes:—

- (1) Construction of Kalgoorlie-Port Augusta Railway.
- (2) Acquisition of land in Federal Territory.
- (3) Purchase of site for High Commissioner's Office in London.
- (4) Redemption of certain Treasury Bills issued by the South Australian Government on behalf of the Northern Territory.
- (5) Repayment to South Australia of amount paid out of revenue towards construction of Oodnadatta Railway.

On 18th April, 1912, an order was passed in pursuance of these Acts, creating Inscribed Stock to the value of £700,000. The money was taken from the Trust Fund, and the stock sold to the Commonwealth Treasurer at par. Interest is at the rate of $3\frac{1}{2}$ per cent. per annum, with a provision for a sinking fund of $\frac{1}{2}$ per cent. The money was spent as follows:—£400,000 in London; £226,000 in reduction of Northern Territory Debt; £84,476 to the Government of South Australia on account of the Oodnadatta Railway. There was a balance of £39,524 unexpended on 30th June, 1912. The loan is repayable at par, at any time between 1st April, 1962, and 1st April, 1972, at the option of the Commonwealth Treasurer. The amount of stock sold under this Act was subsequently increased, and at 30th June, 1913, stood at £2,000,000. The unexpended balance on 30th June, 1913, was £151,498.

The following is a statement of the Public Debt of the Commonwealth at 30th June, 1913:—

COMMONWEALTH PUBLIC DEBT, 30th JUNE, 1913.

Inscribed Stock	...	...	...	...	£2,000,000
Balance of Loans, Northern Territory			...	...	3,359,891
Balance of Loans, Port Augusta-Oodnadatta Railway					2,071,058
Total					£7,430,949

Of this amount, £3,646,548 is repayable in London, and £3,784,401 in Australia. The average rate of interest is £3 14s. 10d. per annum.

SECTION XX.

STATE FINANCE.

§ 1. General.

1. Functions of State Governments.—In any comparison of the finances of the several States due recognition must be made of the actual functions assumed by the respective Governments, and also of the local conditions and requirements in each case. Direct comparisons of public expenditure are thus rendered difficult, owing to the fact that functions which in one State are assumed by the Central Government are in another State relegated to local governing bodies, and further by the fact that costly developmental work may, under certain conditions, be not only economically justifiable, but may be an essential of progress, whilst parsimonious expenditure may be a serious economic blunder. A large expenditure may, therefore, be an indication either of gross extravagance and bad economy on the one hand or healthy and vigorous progress and good economy on the other.

Similarly, as regards revenue, imposts which in some States are levied by the Central Government are in others considered as matters to be dealt with locally. Under these circumstances care is needed in instituting comparisons between the several States, and the particulars contained in this section should be read in connection with those contained in the section dealing with Local Government. It should also be noted that in many ways the budgets of the Australian Governments differ materially from those of most European countries, owing to the inclusion therein of the revenue and expenditure of departments concerned in rendering public services, such for instance as railways, tramways, water supply, etc., which, in the other countries referred to, are often left to private enterprise.

2. Accounts of State Governments.—The various financial transactions of the States are in each case concerned with one or other of three Funds—the “Consolidated Revenue Fund,” the “Trust Funds,” and the “Loan Funds.” All revenue collected by the State is placed to the credit of its Consolidated Revenue Fund, from which payments are made under the authority of an Annual Appropriation Act passed by the Legislature, or by a permanent appropriation under a special Act. The hypothecation of the revenue from a specific tax to the payment for some special service is not practised in Australia, all statutory appropriations ranking on an equality as charges on the Consolidated Revenue Fund. The Trust Funds comprise all moneys held in trust by the Government, and include such items as savings bank funds, sinking funds, insurance companies’ deposits, etc. The Loan Funds are credited with all loan moneys raised by the State, and debited with the expenditure therefrom for public works or other purposes.

3. Inter-relation of Commonwealth and State Finance.—The principal alteration in State finance, brought about by Federation, has been that the States have transferred to the Commonwealth the large revenue received by the Customs and Postal Departments, and have been relieved of the expenditure connected with these and the Defence Departments, while, on the other hand, a new item of State revenue has been introduced, viz., the payment to the States of a Commonwealth subsidy. Provision for the taking over by the Commonwealth of certain of the public debts of the States is made

in section 105 of the Constitution, and a proposed law extending this provision to the whole of the State indebtedness, which passed both Houses of the Federal Legislature by the statutory majority, was submitted to a referendum at the election in April, 1910, and received the requisite endorsement by the electorate. (See also Section XXXIV., *Miscellaneous*, re resolution at Premiers' Conference; 1914.)

§ 2. State Consolidated Revenue Funds.

(A) Receipts.

1. **Sources of Revenue.**—The principal sources of State revenue are:—

- (a) Taxation.
- (b) The public works and services controlled by the State Governments.
- (c) Sale of and rental from Crown lands.
- (d) The Commonwealth subsidy.
- (e) Miscellaneous sources, comprising fines, fees, interest, etc.

Of these sources, that yielding the largest revenue for the States as a whole is the group of public works and services, the principal contributor being the Government railways and tramways. Next in magnitude comes the payment of the subsidy by the Commonwealth, followed in order by Taxation and Land Revenue.

2. **Amount Collected.**—The following table furnishes particulars of the total amount of consolidated revenue received by the several States during the ten years 1903-4 to 1912-13:—

STATE REVENUES, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1903-4 ...	11,248,328	7,319,949	3,595,440	2,568,100	3,550,016	857,668	29,139,501
1904-5 ...	11,336,918	7,515,742	3,595,399	2,798,849	3,615,340	852,681	29,714,929
1905-6 ...	12,283,082	7,811,475	3,853,523	2,866,308	3,558,939	900,657	31,273,934
1906-7 ...	13,392,435	8,345,534	4,307,912	3,252,705	3,401,354	970,843	33,670,783
1907-8 ...	13,960,763	8,314,480	4,488,298	3,722,090	3,376,641	1,005,274	34,867,646
1908-9 ...	13,646,126	8,247,684	4,769,172	3,591,260	3,268,993	934,405	34,457,640
1909-10	14,540,073	8,597,992	5,119,254	4,032,891	3,657,670	1,008,932	36,956,812
1910-11	13,839,139	9,204,503	5,320,008	4,181,472	3,850,439	970,092	37,365,653
1911-12	15,776,816	10,009,796	5,989,347	4,450,739	3,966,673	1,084,663	41,278,034
1912-13	16,057,298	10,287,285	6,378,213	4,506,698	4,596,659	1,206,292	43,032,445

The figures given in this table relate in each instance to the financial year ended 30th June, except in the case of Tasmania, where the figures shewn for 1903-4 relate to the year ended 31st December, 1903.

During the nine years from 30th June, 1903-4, to 30th June, 1912-13, the aggregate revenues of the States increased by no less a sum than £13,892,944, or a little less than 48 per cent. Increases were in evidence in all the States, the largest increase being that of £4,808,970 in New South Wales.

It will be noticed that in all the States, except Queensland, the revenue for 1908-9 was lower than that of the preceding year, largely owing to the fact that the revenue for 1907-8 was swelled by the payment of Customs duties in anticipation of, or in consequence of, the new tariff imposed on 8th August, 1907.

3. **Revenue per Head.**—Details concerning the revenue per head of population, collected in the several States of the Commonwealth during the ten years 1903-4 to 1912-13, are furnished in the table given hereunder. It will be seen that throughout the period Western Australia has collected by far the largest amount per head, and that Tasmania has collected the least.

STATE REVENUE PER HEAD OF POPULATION, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4 ...	7 17 11	6 1 6	6 18 11	7 2 2	15 15 11	4 13 9	7 8 10
1904-5 ...	7 15 9	6 4 8	6 17 0	7 14 0	15 2 0	4 15 1	7 9 6
1905-6 ...	8 5 1	6 9 1	7 5 0	7 16 4	14 4 7	4 16 8	7 15 1
1906-7 ...	8 16 0	6 16 10	7 19 10	8 15 7	13 16 7	5 4 8	8 4 7
1907-8 ...	8 18 10	6 14 11	8 4 6	9 17 3	13 5 9	5 6 0	8 7 7
1908-9 ...	8 12 4	6 11 11	8 11 3	9 4 5	12 11 9	4 17 6	8 2 10
1909-10 ...	9 0 2	6 14 8	8 17 2	10 3 6	13 15 4	5 4 6	8 10 11
1910-11 ...	8 8 5	7 1 5	8 17 8	10 3 11	13 18 2	5 0 1	8 8 11
1911-12 ...	9 8 5	7 6 11	9 12 6	10 12 10	13 9 8	5 12 1	9 0 8
1912-13 ...	9 0 6	7 9 0	10 0 5	10 9 6	15 0 3	6 2 4	9 1 10

In all the States, except Western Australia, the four years up to 1909-10 witnessed a marked increase in the State revenue collections per head, the most noticeable advances being £2 7s. 2d. in the case of South Australia and £1 12s. 2d. in that of Queensland. The Western Australian decline was continuous until 1908-9, though recovering in 1909-10, and for 1912-13 the revenue per head in that State exceeded the Commonwealth average by nearly 65 per cent.

4. **Details for 1912-13.**—Classifying the revenue of the several States in the manner indicated in § 2 (A) 1 above, particulars for the year 1912-13 are as follows:—

DETAILS OF STATE REVENUE, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	All States.
	£	£	£	£	£	£	£
Taxation ...	1,405,360	1,577,878	806,677	536,401	393,615	345,282	5,065,213
Public Works & Services ...	10,116,827	5,799,119	3,451,027	2,773,235	2,909,593	377,109	25,426,910
Land ...	1,895,948	883,131	910,202	360,262	382,117	95,367	3,967,027
Commonwealth subsidy ...	2,178,683	1,691,833	775,948	527,151	805,145	(a) 336,709	6,115,469
Miscellaneous ...	520,480	835,324	434,359	309,649	306,189	51,825	2,457,826
Total ...	16,057,298	10,287,285	6,378,213	4,506,698	4,596,659	1,206,292	43,032,445

(a) Including special grant £95,000.

It will be noted that the amounts returned under the heading "Commonwealth subsidy" do not quite agree with those given in the chapter on Commonwealth Finance, page 707. This arises from the fact that the State figures shew the amount for which credit was taken by the State during the financial year 1912-13, whilst the Commonwealth figures shew the amounts paid to State Treasurers on account of that financial year.

5. **Revenue per Head, 1912-13.**—Particulars concerning the revenue per head of population in each State derived from the several sources enumerated in the preceding paragraph are given hereunder:—

STATE REVENUE PER HEAD, 1912-13.

Particulars.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation ...	0 15 10	1 2 10	1 5 4	1 4 11	1 5 8	1 15 0	1 1 5
Public Works & Services ...	5 13 8	4 4 0	5 8 5	6 9 0	9 10 1	1 18 3	5 7 5
Land ...	1 0 8	0 5 7	1 8 7	0 16 9	1 5 0	0 9 8	0 16 9
Commonwealth Subsidy ...	1 4 6	1 4 6	1 4 5	1 4 6	1 19 6	1 14 2	1 5 10
Miscellaneous ...	0 5 10	0 12 1	0 13 8	0 14 4	1 0 0	0 5 3	0 10 5
Total ...	9 0 6	7 9 0	10 0 5	10 9 6	15 0 3	6 2 4	9 1 10

The magnitude of the revenue per head from public works and services in the case of Western Australia is mainly due to the fact that the number of miles of railway in that State is large compared with the population, and that the revenue-earning power of the railways is also high.

6. **Relative Importance of Sources of Revenue.**—The following table furnishes an indication of the relative importance of the different sources of revenue in the several States, the figures given being the percentage which each item of revenue bore to the total for the State for the year 1912-13:—

PERCENTAGE OF TOTAL STATE REVENUE, 1912-13.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
	%	%	%	%	%	%	%
Taxation	8.75	15.34	12.65	11.90	8.57	28.62	11.77
Public Works and Services ...	63.00	56.37	54.11	61.54	63.30	31.26	59.09
Land	11.43	3.73	14.27	7.99	8.31	7.91	9.22
Commonwealth Subsidy ...	13.57	16.44	12.16	11.69	13.16	27.91	14.21
Miscellaneous	3.25	8.12	6.81	6.88	6.66	4.30	5.71
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

One of the most noticeable features of the figures here given is the comparatively low percentage for "public works and services" and the high percentage for "taxation" in the case of Tasmania. In New South Wales and Queensland land revenue is an important item, while in Queensland the revenue from "public works and services" falls considerably below the Commonwealth average.

7. **State Taxation.**—(a) *Details, 1912-13.* Prior to the inauguration of Federation the principal source of revenue from taxation was the imposition of duties of Customs and Excise. At the present time the most productive forms of State taxation are the income tax, which is now imposed in all the States (Western Australia, the last of the States to adopt this method of taxation, having passed the necessary legislation during the Parliamentary session of 1907), and probate and succession duties. For 1912-13 stamp duties occupied third place. In addition to these a State land tax is now collected in all the States except Queensland, and license fees of various kinds are collected in all the States, while a dividend tax is collected in Western Australia. The total revenue from taxation collected by the States during the year 1912-13 was £5,065,213, details of which are set forth in the table given hereunder:—

STATE REVENUE FROM TAXATION, 1912-13.

Taxation.	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	All States
	£	£	£	£	£	£	£
Probate and succession duties	365,250	443,682	108,367	58,811	47,929	25,980	1,050,019
Other stamp duties	233,940	252,407	186,083	101,498	70,652	75,171	919,751
Land tax	5,738	308,275	...	141,807	46,519	79,276	581,615
Income tax	662,625	542,236	421,507	210,034	72,775	148,413	2,156,054
Dividend tax	...	...	...	...	98,464	...	...
Licenses	137,807	21,751	68,175	24,251	45,934	13,917	311,835
Other taxation	...	9,527	22,545	...	11,342	2,525	45,939
Total	1,405,360	1,577,878	806,677	536,401	393,615	345,282	5,065,213

The most productive form of taxation in the several States during the year 1912-13 was income tax, except in Queensland, where it was exceeded by the kindred dividend tax.

(b) *Summary, 1903-4 to 1912-13.* The total amount raised by means of taxation by the several State Governments during the ten years 1903-4 to 1912-13 is given in the following table:—

STATE REVENUE FROM TAXATION, 1903-4 to 1912-13.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1903-4	1,100,193	938,147	475,184	353,432	235,114	150,091	3,252,161
1904-5	1,114,408	897,870	454,574	442,030	221,738	216,953	3,347,573
1905-6	1,297,776	990,735	494,165	369,756	260,609	248,799	3,661,840
1906-7	1,381,305	1,110,411	540,737	411,867	266,152	276,450	3,986,922
1907-8	1,077,534	977,620	525,540	477,637	277,463	265,656	3,601,450
1908-9	907,249	1,072,228	535,194	450,250	296,599	250,835	3,512,355
1909-10	1,223,521	1,088,353	584,997	481,003	336,396	303,390	4,017,660
1910-11	1,027,519	1,344,573	667,196	545,986	325,246	234,965	4,195,485
1911-12	1,885,653	1,501,696	787,577	551,994	352,314	340,434	5,419,668
1912-13	1,405,360	1,577,878	806,677	536,401	393,615	345,282	5,065,213

During the period between 30th June, 1903-4, and 30th June, 1912-13, the aggregate State revenue from taxation increased by about 56 per cent., the increase varying considerably in the several States. Thus, while New South Wales shewed an increase of only 28 per cent., and South Australia an increase of about 50 per cent., the Queensland revenue advanced by 70 per cent., and that of Tasmania by about 130 per cent. The total decrease in State taxation for the year amounted to £354,455.

The revenue from State taxation per head of population, collected in the several States during each of the years 1903-4 to 1912-13, was as follows:—

STATE TAXATION PER HEAD, 1903-4 to 1912-13.

Year.	New South Wales.	Victoria.	Queensland.	S. Australia.	W. Aust.	Tasmania.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4	0 15 5	0 15 7	0 18 4	0 19 7	1 0 10	0 16 5	0 16 7
1904-5	0 15 4	0 14 11	0 17 4	1 4 4	0 18 6	1 3 5	0 16 10
1905-6	0 17 5	0 16 4	0 18 7	1 0 2	1 0 10	1 6 8	0 18 2
1906-7	0 18 2	0 18 2	1 0 1	1 2 3	1 0 10	1 9 10	0 19 6
1907-8	0 13 9	0 15 10	0 19 3	1 5 3	1 1 10	1 8 0	0 17 3
1908-9	0 11 6	0 17 2	0 19 2	1 3 1	1 2 10	1 6 2	0 16 7
1909-10	0 15 2	0 17 0	1 0 3	1 4 3	1 5 4	1 11 5	0 18 7
1910-11	0 12 6	1 0 8	1 2 3	1 6 8	1 3 6	1 9 5	0 19 0
1911-12	1 2 6	1 2 1	1 5 4	1 6 2	1 3 11	1 15 2	1 3 9
1912-13	0 15 10	1 2 10	1 5 4	1 4 9	1 5 8	1 15 0	1 1 5

Taking the States as a whole the State taxation increased by four shillings and tenpence per head during the period from 1903-4 to 1912-13, the most marked increase being that of eighteen shillings and sevenpence per head in the case of Tasmania. State taxation per head is at present highest in Tasmania and lowest in New South Wales.

8. *Commonwealth and State Taxation.*—For the purpose of obtaining an accurate view of the extent of taxation imposed on the people of the Commonwealth by the central governing authorities it is necessary to add together the Commonwealth and State collections. This has been done in the table given hereunder, which contains particulars

concerning the total taxation for each of the years 1908-9 to 1912-13, as well as the amount per head of population:—

COMMONWEALTH AND STATE TAXATION, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Commonwealth taxation ...	10,844,067	11,593,164	14,350,788	16,076,593	17,117,828
State taxation ...	3,512,355	4,017,660	4,195,485	5,419,668	5,065,213
Total... ..	14,356,422	15,610,824	18,546,273	21,496,261	22,183,041
Taxation per head ...	£3 7 2	£3 11 2	£4 3 10	£4 14 1	£4 13 9

Whilst the Commonwealth taxation increased during the period by £6,273,761, the State taxation advanced by £1,552,858, the aggregate increase being £7,826,619. The amount has, however, fluctuated somewhat during the period, and has ranged between a minimum of £3 7s. 2d. per head in 1908-9 and a maximum of £4 14s. 1d. per head in 1911-12. The large increase in Commonwealth taxation in recent years is mainly due to the appearance of the Federal Land Tax.

9. Public Works and Services.—A very large proportion of the revenue of all the States of the Commonwealth is made up of the receipts from the various public works and services under the control of the several Governments. The principal of these are railways and tramways, harbour works, and water supply and sewerage, while in addition, State batteries for the treatment of auriferous ores exist in Western Australia, and various minor revenue-producing services are rendered by the Governments of all the States. For the year 1912-13 the aggregate revenue from this source totalled £25,426,910, or nearly 60 per cent. of the revenue from all sources. Details of revenue from public works and services for the year 1912-13 are as follows:—

STAT REVENUE FROM PUBLIC WORKS AND SERVICES, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and Tramways ...	8,544,376	5,250,599	3,318,752	2,265,827	2,047,820	324,909	21,752,283
Harbour Services ...	579,555	122,257	46,177	108,219	190,613	...	1,046,821
Public Batteries ...	...	412	...	...	42,884	...	43,296
Water Supply and Sewerage ...	699,744	(a) 176,140	...	(a) 184,489	374,208	...	1,434,581
Other Public Services ...	293,152	249,711	86,098	214,700	254,068	52,200	1,149,929
Total	10,116,827	5,799,119	3,451,027	2,773,235	2,909,593	377,109	25,426,910

(a) Water supply only.

10. Land Revenue.—The revenue derived by the States from the sale and rental of Crown lands has, with few exceptions, been treated from the earliest times as forming part of their respective Consolidated Revenue Funds, and has been applied to meet ordinary current expenses. Where the rentals received are for lands held for pastoral or for residential purposes, such application of the revenue appears perfectly justifiable. On the other hand, where the rentals are those of mineral and timber lands, and in all cases of sales of lands, such a proceeding is essentially a disposal of capital in order to defray current expenses. As a matter of financial procedure such a course is open to criticism. In the following table particulars of revenue derived from sales and rental of Crown lands are given for the year 1912-13:—

STATE LAND REVENUE, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
Sales ...	999,363	233,232	260,785	222,343	238,744	62,568	2,017,035
Rentals ...	836,585	149,899	649,417	137,919	143,373	32,799	1,949,992
Total ...	1,835,948	383,131	910,202	360,262	382,117	95,367	3,967,027

11. **Commonwealth Subsidy.**—The payments to the States of Commonwealth subsidy represent in each instance a considerable proportion of the State's revenue, and for the year 1912-13 aggregated £6,115,469. This represents a great decline from the amounts received up to 1910, owing to the new system of allotting the subsidy. The percentage which the subsidy received by each State for 1912-13 was of the total revenue of that State is shewn in the following table:—

COMMONWEALTH SUBSIDY PAID TO STATES DURING 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Commonwealth subsidy ...	2,178,683	1,691,833	775,948	527,151	605,145	336,709	6,115,469
Total revenue ...	16,057,298	10,287,285	6,378,213	4,506,698	4,596,659	1,206,292	43,032,445
Percentage of subsidy on revenue ...	%	%	%	%	%	%	%
	13.57	16.44	12.16	11.69	13.16	27.91	14.21

(a) Includes special grant of £95,000.

The amount of subsidy here shewn is that for which the several States took credit during the year 1912-13. (See also page 714.)

12. **Miscellaneous Items of Revenue.**—In addition to the foregoing sources of revenue there are in each State several miscellaneous ones, including such items as interest, fines, fees, etc., which for the year 1912-13 aggregated £1,201,278.

(B) Disbursements.

1. **Heads of Expenditure.**—The principal heads of State expenditure from Consolidated Revenue Funds are:—

- (a) Interest and sinking funds in connection with public debt.
- (b) Working expenses of railways and tramways.
- (c) Justice.
- (d) Police.
- (e) Penal establishments.
- (f) Education.
- (g) Medical and charitable expenditure.
- (h) All other expenditure.

Of these items that of working expenses of railways and tramways was the most important, and for the year 1912-13 represented about 35 per cent. of the aggregate expenditure from the Consolidated Revenue Fund. Next in order for that year was the item of interest and sinking fund in connection with the public debt, then education, medical and charitable expenditure, police, other public works, and lands and surveys in the order named.

2. **Total Expenditure.**—The total expenditure from Consolidated Revenue Funds in the several States during each of the years 1903-4 to 1912-13 is furnished in the table given hereunder :—

STATE EXPENDITURE, CONSOLIDATED REVENUE FUNDS, 1903-4 to 1912-13.

Year.	N.S. Wales.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
1903-4 ...	11,319,888	7,339,608	3,607,864	2,707,254	3,698,312	879,356	29,552,282
1904-5 ...	11,195,075	7,343,742	3,581,403	2,860,894	3,745,224	840,184	29,566,522
1905-6 ...	11,386,864	7,261,475	3,725,712	3,004,974	3,632,318	853,147	29,864,490
1906-7 ...	11,876,657	7,679,143	3,911,797	3,394,999	3,490,182	913,762	31,266,540
1907-8 ...	12,095,593	7,862,216	4,373,097	3,862,336	3,379,006	929,885	32,502,163
1908-9 ...	12,893,662	8,240,177	4,759,231	3,760,005	3,870,530	960,237	33,983,842
1909-10 ...	13,038,150	8,579,980	5,113,578	4,196,493	3,447,732	997,321	35,373,254
1910-11 ...	13,807,538	9,194,157	5,314,737	4,181,472	3,734,448	1,016,963	37,249,315
1911-12 ...	15,277,001	9,999,342	5,965,692	4,450,739	4,101,082	1,064,725	40,858,581
1912-13 ...	16,798,500	10,258,081	6,372,097	4,506,698	4,787,063	1,095,883	43,818,322

As in the case of the table previously given for revenue, the above figures relate to the year ended 30th June, except in the case of 1903-4, which contains Tasmanian figures for the year ended 1903.

3. **Expenditure per Head.**—Owing to the varying conditions of the several States and the extent to which the different functions of Government are distributed therein between central and local governing authorities, the expenditure per head from Consolidated Revenue Funds differs materially in the several States, being highest in the case of Western Australia and lowest in that of Tasmania. The expenditure per head of population for each State for the years 1903-4 to 1912-13 is as follows:—

STATE EXPENDITURE PER HEAD, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4 ...	7 18 10	6 1 10	6 19 4	7 9 11	16 9 1	4 16 2	7 10 11
1904-5 ...	7 13 10	6 1 10	6 16 5	7 17 4	15 12 10	4 10 9	7 8 9
1905-6 ...	7 13 1	6 0 0	7 0 2	8 3 11	14 10 5	4 11 6	7 8 1
1906-7 ...	7 16 1	6 5 11	7 5 2	9 3 4	13 13 7	4 18 6	7 12 10
1907-8 ...	7 14 11	6 7 6	8 0 3	10 4 8	13 5 6	4 18 1	7 16 2
1908-9 ...	8 2 10	6 11 9	8 10 10	9 13 1	12 19 7	5 0 2	8 0 7
1909-10 ...	8 1 7	6 14 4	8 17 0	10 11 9	12 19 6	5 3 3	8 3 7
1910-11 ...	8 8 0	7 1 3	8 17 5	10 3 11	13 9 9	5 4 11	8 8 4
1911-12 ...	9 2 5	7 6 9	9 11 9	10 12 10	13 18 10	5 10 1	8 18 10
1912-13 ...	9 9 0	7 8 8	10 0 3	10 9 6	15 12 9	5 11 2	9 5 2

In all the States except South Australia increases in the expenditure per head took place during the year 1912-13, ranging from 33s. 11d. per head in the case of Western Australia to 1s. 1d. per head in that of Tasmania.

4. **Details of Expenditure for 1912-13.**—The following table furnishes for the year 1912-13 particulars as to the expenditure of the several States under each of the principal heads:—

DETAILS OF STATE EXPENDITURE, 1912-13.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Public debt (int., sink'g fund, &c.)	3,988,336	2,415,324	1,844,096	1,314,091	1,207,967	447,581	11,217,395
Rlways. & tramways (work'g exps.)	6,390,420	3,459,832	2,148,991	1,479,301	1,518,293	217,355	15,214,192
Justice	336,923	201,931	85,200	38,820	61,321	11,807	736,002
Police	552,146	357,396	277,861	116,847	127,179	43,236	1,474,665
Penal establishments ...	89,712	53,189	27,304	18,905	22,291	5,664	217,065
Education	1,496,525	1,098,796	487,135	284,853	310,345	100,411	3,778,065
Medical and charitable ...	643,126	528,346	346,627	159,519	216,700	67,728	1,962,046
All other expenditure ...	3,301,312	2,143,267	1,154,883	1,094,362	1,322,967	202,101	9,218,892
Total	16,798,500	10,258,081	6,372,097	4,506,638	4,787,063	1,095,893	43,818,322

5. **Expenditure per Head, 1912-13.**—The expenditure per head of population of the several States for the year 1912-13, under each of the principal items, is given hereunder:—

STATE EXPENDITURE PER HEAD, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public debt, (interest, sinking fund, &c.)	2 4 10	1 15 0	2 18 2	3 1 2	3 18 11	2 5 6	2 7 5
Railways and tramways (working expenses) ...	3 11 11	2 10 2	3 7 6	3 8 9	4 19 3	1 2 0	3 4 3
Justice	0 3 9	0 2 11	0 2 8	0 1 9	0 4 0	0 1 2	0 3 1
Police	0 6 2	0 5 3	0 8 8	0 5 4	0 8 4	0 4 5	0 6 3
Penal establishments ...	0 1 0	0 0 9	0 0 10	0 0 10	0 1 5	0 0 7	0 0 11
Education	0 16 10	0 15 11	0 15 3	0 13 3	0 1 3	0 10 2	0 16 0
Medical and charitable ...	0 7 3	0 7 8	0 10 11	0 7 5	0 14 2	0 6 10	0 8 3
All other expenditure ...	1 17 3	1 11 0	1 16 3	2 11 0	4 6 5	1 0 6	1 19 0
Total	9 9 0	7 8 8	10 0 3	10 9 6	15 12 9	5 11 2	9 5 2

In four of the States, viz., Western Australia, South Australia, Queensland, and New South Wales, the average State expenditure per head exceeded that for the Commonwealth as a whole, falling short of it in the other two States.

6. **Relative Importance.**—The relative importance of the items of expenditure enumerated above varies considerably in the several States. This will readily be seen from the following table, giving for each State the percentage of the expenditure under the various items, on the total expenditure for the State:—

PERCENTAGE OF TOTAL STATE EXPENDITURE, 1912-13.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
	%	%	%	%	%	%	%
Public debt (interest, sinking fund, &c.)	23.74	23.55	28.91	29.16	25.23	40.85	25.60
Railways and tramways (working expenses) ...	38.04	33.73	33.73	32.83	31.72	19.83	34.72
Justice	2.01	1.97	1.34	0.86	1.28	1.08	1.68
Police	3.29	3.48	4.36	2.59	2.66	3.94	3.37
Penal establishments ...	0.53	0.52	0.44	0.42	0.47	0.52	0.50
Education	8.91	10.71	7.65	6.32	6.48	9.16	8.62
Medical and charitable ...	3.93	5.15	5.44	3.54	4.53	6.18	4.48
All other expenditure ...	19.65	20.89	18.13	24.28	27.63	18.44	21.03
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Taken together, the interest and sinking fund on the public debt, and the working expenses of the railways and tramways, represented for the year 1912-13 about 60 per cent. of the aggregate State expenditure.

(c) Balances.

1. **Position on 30th June, 1913.**—On various occasions in each of the States the revenue collected for a financial year has failed to provide the funds requisite for defraying the expenditure incurred during that year, the consequence being a deficit which is usually liquidated either by cash obtained from trust funds, or by the issue of Treasury bills. In some of the States a number of such deficits has occurred, interspersed with occasional surpluses, the result being an accumulating overdraft, which in certain instances assumed very large proportions. Thus, during the period of financial stress resultant upon the crisis of 1893 and the drought conditions of succeeding years, the accumulated overdrafts of several of the States grew very rapidly. The very favourable financial conditions of recent years have enabled the various Treasurers to considerably reduce such liabilities from time to time, and at 30th June, 1913, the position of the balances of the several Consolidated Revenue Funds was as set forth in the table hereunder:—

STATE CONSOLIDATED REVENUE FUND BALANCES, 30th JUNE, 1913.

State.		Cash Credit Balances.	Debit Balance.		Net Result.
			Cash Overdraft.	Overdraft liquidated by Treasury Bills	
		£	£	£	£
New South Wales	...	...	1,167,017	...	Dr. 1,167,017
Victoria	...	...	264,971	...	Dr. 264,971
Queensland	...	6,116	...	...	Cr. 6,116
South Australia	...	176,416	...	...	Cr. 176,416
Western Australia	...	...	311,515	...	Dr. 311,515
Tasmania	...	106,823	...	...	Cr. 106,823
Total	...	289,355	1,743,503	...	Dr. 1,454,148

(D) Principal State Taxes.

(a) Probate and Succession Duties.

1. **General.**—Probate duties have been levied for a considerable time in all the States of the Commonwealth. From the provisions of the several State Acts governing the payment of duty, it will be seen that both the ordinary rates and those which apply to special beneficiaries differ widely in several cases. In the following table the amount under which the estates of deceased persons were sworn, is shewn for the years 1908 to 1912:—

VALUE OF ESTATES OF DECEASED PERSONS, 1907-8 to 1911-12.

State.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£
New South Wales	7,838,572	11,142,068	8,834,934	13,138,068	13,389,806
Victoria	7,128,085	6,480,376	7,430,949	8,469,163	8,533,502
Queensland	1,376,255	1,508,883	1,652,691	2,409,495	2,730,039
South Australia	2,105,351	1,939,509	2,422,519	2,855,089	(a) 2,383,238
Western Australia	955,995	939,318	868,638	844,151	(a) 841,800
Tasmania	1,023,629	722,011	797,439	596,870	983,618
Total	20,427,887	22,732,165	22,007,170	28,312,836	28,862,003

(a) Gross values.

The duty collected in the several States for the financial years 1908-9 to 1912-13 is as follows:—

AMOUNT OF PROBATE AND SUCCESSION DUTIES COLLECTED, 1908-9 to 1912-13.

State.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
New South Wales ...	301,681	650,202	357,750	849,405	365,250
Victoria ...	418,418	358,173	433,104	448,283	443,682
Queensland ...	57,012	61,193	71,637	144,309	108,367
South Australia ...	86,344	84,651	109,698	95,667	58,811
Western Australia ...	20,132	57,416	23,124	22,276	47,929
Tasmania ...	28,641	44,267	27,459	35,012	25,980
Total ...	912,228	1,255,902	1,022,772	1,594,952	1,050,019

For particulars relating to the legislation of the different States on probate and succession duties see Year Book No. 6, pp. 815-818.

(b) Stamp Duties.

1. **Legislation in the Several States.**—The principal Acts at present in force in the several States relating to stamp duties are as follows:—

- (a) *New South Wales.* Stamp Duties Act 1898, with amendments in 1900, 1904, and 1907.
- (b) *Victoria.* Stamps Act 1890, with amendments in 1892, 1900, 1904, and 1908.
- (c) *Queensland.* Stamp Act 1894, with amendment in 1904.
- (d) *South Australia.* Stamp Act 1886, with amendment in 1902.
- (e) *Western Australia.* Stamp Act 1882, with amendments in 1905 and 1906.
- (f) *Tasmania.* Stamp Duties Act 1882, with amendments in 1886, 1888, 1892, 1900 and 1904.

These Acts provide for the payment of duty on bank notes, bills of exchange, and promissory notes, deeds, leases, policies, receipts, transfers, and so forth, all of which with the exception of bank notes are required to be stamped either by an impressed or adhesive stamp, as the case may be.

The revenue derived by the several States of the Commonwealth from the imposition of stamp duties for the years 1908-9 to 1912-13 is shewn in the accompanying table:—

**STAMP REVENUE (EXCLUSIVE OF PROBATE AND SUCCESSION DUTIES),
1908-9 to 1912-13.**

State.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
New South Wales ...	205,022	222,720	268,091	255,085	233,940
Victoria ...	237,681	250,358	275,314	285,212	252,407
Queensland ...	132,073	145,556	174,051	187,533	186,083
South Australia ...	89,160	97,877	109,274	106,910	101,498
Western Australia ...	58,065	62,714	79,404	74,828	70,652
Tasmania ...	53,713	54,741	61,118	64,236	75,171
Total ...	775,714	833,966	967,252	973,804	919,751

2. **Bank Notes.**—Promissory notes issued by any bank are not required to bear a duty stamp either impressed or adhesive, and may be re-issued as often as thought fit. An annual composition was, however, paid in lieu of stamp duty up to 1910. This composition was payable quarterly, and was the same in all States, being at the rate of £2 per annum

on every £100 or part thereof of the average annual amount of bank notes in circulation. On 2nd June, 1893, the Treasury Notes Act of Queensland was assented to, by which the issue of Treasury notes payable on demand was authorised. These notes were used exclusively by the banks in that State, but their issue has been prohibited by the Federal Bank Note Tax Act, and they have now almost passed out of circulation. (See Section xxi., Private Finance.)

The issue of bank notes by the banks has been seriously restricted by this Act, which passed the Federal Parliament in the session of 1910, and was assented to on 10th October, 1910. Further reference is made to the Act in the section dealing with Private Finance. It is enough to say here that it imposes a tax of 10 per cent. per annum on all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of the Act and not redeemed.

3. Bills of Exchange and Promissory Notes.—(i.) *Rates.* In all the States except New South Wales, when a bill of exchange or promissory note is payable on demand, the rate charged is one penny. When the bill was not payable on demand the duty levied in New South Wales, until the Amendment Act of 1907 came into force on 1st January, 1908, was sixpence for every £25 or part thereof, but under this Act no duty is now payable on bills of exchange or promissory notes in that State. The rate in Victoria for all bills of exchange was sixpence for every £25* up to £100, and one shilling for every £50 over £100, but under the Act of 1908 these rates only apply to those bills both drawn in and payable in Victoria, all others being free from duty. One shilling is charged in Queensland for every £50. For every £25 the duty in South Australia is sixpence if the bill is negotiable in the Commonwealth, but when a bill is drawn in South Australia and payable in any place beyond the Commonwealth, one shilling is charged for every £100, in which case an adhesive stamp only is to be used. In Western Australia, when the amount of the bill does not exceed £25 the duty payable is sixpence, when it exceeds £25 the duty is increased by sixpence for every £25 up to £100, and when it exceeds £100, one shilling for every £50 is charged. An amount of threepence is levied in Tasmania for a bill not exceeding £5; sixpence for one exceeding £5 and under £25; and an additional sixpence for every succeeding £25.

(ii.) *Exemptions.* The chief classes of bills which are exempt from taxation are Government debentures, Treasury notes, drafts on account of Public Service, drafts by banker on banker, letters of credit in the State, etc.

4. Bills of Lading.—*Rates.* The charge made for a bill of lading or copy thereof is sixpence in four of the States, viz., New South Wales, Victoria, South Australia, and Tasmania. In Queensland the rate is one shilling, and for a receipt of a bill of lading sixpence, whilst in Western Australia the duty is threepence if the goods do not exceed half a ton in weight or measurement, and sixpence if the goods exceed that quantity. The Acts provide that no bill of lading is to be stamped after its execution.

5. Receipts.—(i.) *Rates.* The duty payable on receipts given on payment of the amount of £2 or upwards in the States of Victoria, South Australia and Western Australia is one penny. Under the provisions of the Stamp Duties Act of 1898 the rate in New South Wales was twopence for £2 or over, but this was repealed by the Stamp Duties Amendment Act of 1907, and no duty is now payable on receipts in that State.† Acknowledgments for payment of £1 or upwards were taxed one penny in Queensland under the 1894 Act, but by Amendment Acts of 1901, 1903 and 1904, the first two of which have since been repealed, it was provided that amounts of £1 and less than £2 were to be taxed one penny; £2 and less than £50, twopence; £50 and less than £100, threepence; and £100 or over, sixpence for every £100 or part thereof. By the 1904 Amendment Act of Tasmania, receipts for sums amounting to £2 and not over £5 are subject to a duty of one penny, and when the amount exceeds £5, one penny is charged for every additional £10 or part thereof, provided that the maximum duty on any receipt is fourpence.

* "Or fractional part thereof" is to be understood after all amounts mentioned.

† Since the above was written the duty has been re-instated.

(ii.) *Exemptions.* The exemptions from payment of duty on receipts vary considerably in the several States, and amongst others may be mentioned the following:—On His Majesty's Service, banker's receipt for bill of exchange or promissory note, current accounts, savings bank accounts, municipal rates, money orders and postal notes, wages received by labourers, workmen, etc.

(c) **Land Tax.**

1. **General.**—Queensland is the only State in the Commonwealth in which a State land tax is not levied, although it was as recently as 1907 that the first tax on land was imposed in Western Australia. In all of the other States the tax dates back to a much earlier period.

The following table shews the amount collected by means of such taxes during the financial years 1908-9 to 1912-13 in the States in which a land tax was imposed:—

LAND TAX COLLECTIONS, 1908-9 to 1912-13.

State.				1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
				£	£	£	£	£
New South Wales	...	...	...	80,794	9,066	7,438	6,479	5,738
Victoria	...	...	...	85,559	114,357	210,640	293,823	308,275
South Australia	...	...	...	92,158	94,126	135,614	118,725	141,807
Western Australia	...	...	...	33,120	34,344	37,871	45,166	46,519
Tasmania	...	...	...	59,651	79,021	64,932	81,234	79,276
Total	...	...	...	351,282	330,914	456,495	545,427	581,615

For details relating to State Land Tax legislation see Year Book No. 6, pp. 821-823.

(d) **Income Tax.**

1. **General.**—A duty on the income of persons, whether it be derived from personal exertion or from the produce of property, is now imposed in all the States of the Commonwealth. As might be expected in dealing with the different States, the rates, exemptions, etc., are widely divergent, but the general principle of the several Acts is strikingly consistent. The Dividend Duties Acts of Queensland and Western Australia—the former of which is now repealed—supplied to a certain extent the place of an income tax in those States in former years, but, with the increasing demands upon the State Treasury, the levying of a direct income tax has been resorted to.

In the following table particulars are furnished concerning the total amount collected in the several States during the years 1908-9 to 1912-13. In the case of Queensland and Western Australia the amount of dividend duty collected is included, this tax being closely allied to the income tax.

INCOME AND DIVIDEND TAXES, 1908-9 to 1912-13.

(STATES.)

State				1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
				£	£	£	£	£
New South Wales	...	...	...	202,369	219,977	269,142	644,571	662,625
Victoria	...	...	...	304,464	333,585	395,998	443,248	542,236
Queensland	...	...	...	273,091	304,693	348,513	372,497	421,507
South Australia	...	...	...	160,777	180,923	168,707	207,416	210,034
Western Australia	...	...	...	134,164	132,180	134,075	154,442	171,239
Tasmania	...	...	...	94,015	110,258	115,836	143,875	148,413
Total	...	...	...	1,168,880	1,286,616	1,432,271	1,966,049	2,156,054

For details relating to Income Tax legislation in the various States see Year Book No. 6, pp. 823-829.

§ 3. Trust Funds.

1. **Nature.**—In addition to the moneys received by the several State Governments as revenue, and paid to the credit of their respective Consolidated Revenue Funds, considerable sums are held by the Governments in trust for various purposes. One of the chief sources of these trust funds is the State Savings Bank, which exists in each State, either as a Government department or under the control of a Board acting under Government supervision or Government guarantee. In most of the States also, sinking funds for the redemption of public debt are provided, and the moneys accruing thereto are paid to the credit of the appropriate trust funds. A similar course is followed in the case of municipal sinking funds placed in the hands of the Government. In all the States except New South Wales, life assurance companies carrying on business are required to deposit a substantial sum in cash or approved securities with the Government, and these deposits go to further swell the trust funds. Various other deposit accounts, superannuation funds, suspense accounts, etc., find a place in these funds. The trust funds have at various times enabled the several State Treasurers to tide over awkward financial positions, but the propriety of allowing deficits to be frequently liquidated in this manner is worthy of very serious consideration.

2. **Extent of Funds.**—The amount of such funds held by the several State Governments on 30th June, 1913, was as follows:—

TRUST FUNDS ON 30th JUNE, 1913.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Amount of trust funds	6,134,067	8,223,116	6,365,891	730,516	9,853,769	715,839	32,023,198

§ 4. Loan Funds.

1. **Nature.**—As early in the history of Australia as 1842 it was deemed expedient to supplement the revenue collections by means of borrowed moneys, the earliest of the loans so raised being obtained by New South Wales for the purpose of assisting immigration, at rates of interest varying from 2½d. to 5½d. per £100 per diem, or approximately from 4½ per cent. to 8 per cent. per annum. The principal reason for Australian public borrowing, however, has been the fact that the Governments of the several States have, in addition to ordinary administrative duties, undertaken the performance of many functions which, in other countries, are usually entrusted to local authorities, or left to the initiative of private enterprise. Principal amongst these have been the construction of railways and the control of the railway systems of the several States, while the assumption by the State Governments of responsibilities in connection with improvements to harbours and rivers, and the erection of lighthouses, as well as the construction of works for the purposes of water supply and sewerage, have materially swelled the amounts which it has been considered expedient to obtain by means of loans. The Australian loan expenditure and public debt thus differ very materially from those of most European countries, where such expenditure is very largely incurred for purposes of defence, or absorbed in the prosecution of war. The debt of Australia, on the other hand, consists in the main of moneys raised and expended with the object of assisting the development of the resources of the Commonwealth, and is, to a very large extent, represented by tangible assets such as railways, tramways, waterworks, etc.

2. **Loan Expenditure, 1912-13.**—During the year ended 30th June, 1913, the actual expenditure of the Australian States from loan funds amounted to £18,429,274, New South Wales with a total of £7,703,594 being the principal contributor to this amount, while Western Australia, whose expenditure amounted to £3,423,020, ranked second. The chief item of expenditure for the year was that of railways and tramways, which represented a total of £11,189,503, water supply and sewerage works contributing the amount of £2,630,408; the expenditure on harbours, rivers, etc., and roads and bridges totalling £1,203,549, and land purchases for settlement, loans to local bodies, etc., £2,113,231, were the most important of the remaining items. Details for the year for each State are given in the following table:—

STATE LOAN EXPENDITURE, 1912-13.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways ...	4,618,967	1,231,113	2,066,819	1,207,335	1,948,876	116,393	11,189,503
Water supply and sewerage ...	1,595,093	256,724	2,534	382,672	393,385	...	2,630,408
Harbours, rivers, etc. ...	677,631	753	...	173,471	168,069	183,625	1,203,549
Roads and bridges ...	...	...	52,332	32,771	70,133	27,556	593,123
Public buildings ...	410,031	...	...	...	48,190	...	48,636
Development of mines, etc. ...	...	446	...	411,741	...	...	...
Advances to settlers ...	...	54,061	...	183,168	404,937	18,897	2,113,231
Land purchases for settlement ...	300,000	...	305,749	...	...	57,789	...
Loans to local bodies ...	...	569,473	17,367	3,373	...	...	...
Rabbit-proof fences ...	3,012	...	3,265	69,142	369,430	...	650,824
Other public works and purposes	98,860	90,127	...	...	...	...	...
Total ...	7,703,594	2,202,697	2,448,066	2,247,337	3,423,020	404,560	18,429,274

(a) Credit.

3. **Aggregate Loan Expenditure.**—The total loan expenditure of the Australian States from the initiation of the borrowing system to the 30th June, 1913, has amounted to no less a sum than £293,741,002. The manner in which this sum has been spent in the several States is furnished in the following table:—

AGGREGATE STATE LOAN EXPENDITURE TO 30th JUNE, 1913.

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Railways and tramways...	66,623,035	44,511,881	32,101,216	16,033,551	15,269,500	4,670,042	179,203,225
Telegraphs & telephones ...	1,761,845	...	996,587	991,773	332,118	142,410	4,221,733
Water supply & sewerage ...	17,492,777	10,893,726	365,277	6,904,810	3,957,371	...	39,613,961
Harbours, rivers, etc. ...	10,754,612	611,812	2,445,290	2,502,007	3,000,549	4,023,274	28,125,444
Roads and bridges ...	1,839,076	176,475	923,656	1,461,736	383,957	...	...
Defence ...	1,457,536	149,323	363,084	291,615	...	128,224	2,389,782
Public buildings ...	6,543,721	1,912,029	1,552,753	1,186,848	792,432	1,002,338	12,890,151
Immigration ...	569,930	...	2,763,070	...	311,872	235,000	3,879,872
Development of mines, &c. ...	...	281,664	...	...	1,271,958	...	1,553,622
Advances to settlers ...	...	289,644	...	962,898	...	...	...
Land purchases for settlement ...	789,000	4,382,807	...	1,765,448	1,970,804	156,931	14,960,042
Loans to local bodies ...	...	...	3,355,615	376,727	...	894,813	...
Rabbit-proof fences ...	55,415	...	...	...	...	...	...
Other public works & purposes ...	329,461	1,743,049	1,529,135	2,249,943	472,089	470,493	6,794,170
Total ...	108,216,408	64,952,410	46,395,713	34,750,296	27,762,650	11,663,525	293,741,002

(a) Exclusive of £1,866,168 for "Loans in aid of Revenue."

It must be noted that the figures furnished in this table represent the amounts actually spent, and consequently differ somewhat from those given later in the statements relating to the public debt, which represent amount of loans still unpaid at a given date. The loan expenditure statement includes all such expenditure, whether the loans by means of which the necessary funds were raised have been repaid or are still in existence. On the other hand, in the public debt statement loans repaid are excluded,

but in the case of loans still outstanding each is shown according to the amount repayable at maturity, not according to the amount originally available for expenditure.

4. Relative Importance of Loan Items.—The relative importance of the different items of loan expenditure given in the foregoing table varies considerably in the several States, but in each instance the expenditure on railways and tramways predominates, the percentage of this item on total expenditure ranging between the limits of 40 per cent. in the case of Tasmania and 69 per cent. in that of Queensland. The following table gives for each State the percentage of each item on the total loan expenditure of that State to 30th June, 1913:—

**PERCENTAGE OF EACH ITEM ON TOTAL LOAN EXPENDITURE OF THE STATES
TO 30th JUNE, 1913.**

Heads of Expenditure.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	%	%	%	%	%	%	%
Railways and tramways ...	61.56	68.53	69.19	46.14	55.00	40.04	61.01
Telegraphs and telephones ...	1.63	...	2.15	2.85	1.20	1.22	1.44
Water supply and sewerage ...	16.16	16.77	0.79	19.87	14.25	...	13.49
Harbours, rivers, etc. ...	9.94	0.94	5.27	7.23	10.81	34.49	9.58
Roads and bridges ...	1.70	0.27	1.99	4.21	1.38		
Defence ...	1.35	0.23	0.78	0.84	...	1.10	0.81
Public buildings ...	6.05	2.94	3.35	3.41	2.85	8.59	4.42
Immigration ...	0.53	...	5.96	...	1.13	2.01	1.32
Development of mines, etc. ...	...	0.44	...	...	4.58	...	0.53
Advances to settlers ...	...	0.45	...	2.83	7.10	1.35	5.09
Land purchases for settlement	0.73	6.75	...	5.07		...	
Loans to local bodies ...	...	...	7.23	...		7.17	
Rabbit-proof fences ...	0.05	...	...	1.08		...	
Other public works & purposes	0.30	2.68	3.29	6.47	1.70	4.03	2.31
Total ...	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5. Loan Expenditure in Successive Years.—In the following table are given particulars relative to the loan expenditure of the several States during each of the years 1903-4 to 1912-13:—

STATE LOAN EXPENDITURE, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1903-4 ...	2,288,742	447,244	603,805	415,728	710,629	167,123	4,633,271
1904-5 ...	1,571,257	373,191	225,466	449,214	654,353	150,994	3,424,475
1905-6 ...	1,367,022	932,966	297,624	449,930	372,442	136,971	3,556,955
1906-7 ...	1,058,553	595,658	683,570	499,132	900,964	156,945	3,894,822
1907-8 ...	1,965,329	783,538	1,033,676	495,928	733,745	224,954	5,237,170
1908-9 ...	2,906,507	1,098,360	1,247,821	832,114	1,012,452	334,200	7,431,454
1909-10 ...	3,246,640	1,209,505	1,486,216	978,082	1,028,995	435,104	8,384,542
1910-11 ...	3,921,758	2,657,271	1,995,301	1,567,210	1,484,367	300,216	11,926,123
1911-12 ...	5,491,103	2,974,149	3,324,248	1,756,050	2,344,070	435,557	16,325,177
1912-13 ...	7,703,594	2,202,697	2,448,066	2,247,337	3,423,020	404,560	18,429,274

Throughout the ten years under review the loan expenditure of New South Wales exceeded that of any other of the States, and for the year 1903-4 represented about half of the aggregate of Australia. The large loan expenditure of New South

Wales in 1908-9, 1909-10 and 1910-11 was incurred chiefly in connection with railway construction and the resumption of the fore-shores and adjoining properties of Darling Harbour. In Victoria the large expenditure of 1905-6 resulted in large measure from the purchase of lands for closer settlement, while the construction of railways and water supply and sewerage works was mainly responsible for the high amounts of 1908-9 and 1909-10. In 1910-11 the large amount was mainly accounted for by heavy expenditure on railways and land purchased for settlement. In the case of the large loan expenditure of Queensland in 1906-7, 1908-9, 1909-10 and 1910-11, railway construction was the principal contributing item. In Western Australia the heavy loan expenditure of 1908-9 was principally in connection with railway construction and water supply.

6. Loan Expenditure per Head.—The loan expenditure per head of population varies materially in the different States and in different years, reaching its highest point for the ten years under review in Western Australia in 1912-13 with £11 3s. 7d. per head, and its lowest in Victoria in 1904-5 with 6s. 2d. per head. Particulars concerning the loan expenditure per head for the ten years 1903-4 to 1912-13 are given hereunder:—

LOAN EXPENDITURE PER HEAD, 1903-4 to 1912-13.

Year	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4	... 1 12 1	0 7 4	1 3 4	1 3 0	3 3 3	0 18 3	1 3 8
1904-5	... 1 1 7	0 6 2	0 8 7	1 4 8	2 14 8	0 16 3	0 17 3
1905-6	... 0 18 4	0 15 5	0 11 2	1 4 6	1 9 9	0 14 8	0 17 6
1906-7	... 0 13 10	0 9 9	1 5 4	1 7 0	3 10 7	0 16 11	0 19 0
1907-8	... 1 5 2	0 12 9	1 17 11	1 6 3	2 17 8	1 3 9	1 5 2
1908-9	... 1 16 8	0 17 7	2 4 10	2 2 9	3 18 0	1 14 10	1 15 1
1909-10	... 2 0 3	0 18 11	2 11 5	2 9 4	3 17 6	2 5 1	1 18 9
1910-11	... 2 7 9	2 0 10	3 6 7	3 16 5	5 7 3	1 11 0	2 13 11
1911-12	... 3 5 7	2 3 8	5 6 10	4 4 0	7 19 4	2 5 0	3 11 6
1912-13	... 4 6 8	1 11 10	3 16 11	5 4 6	11 3 7	2 1 0	3 17 10

§ 5. Public Debt.

1. The Initiation of Public Borrowing.—The earliest of the loans raised in Australia for Government purposes was that obtained by New South Wales in 1842. This and nine other loans raised prior to 1855 were all procured locally. In the last-mentioned year Australia's first appearance on the London market occurred, the occasion being the placing of the first instalment of the New South Wales 5 per cent. loan for £683,300. Victoria first appeared as a borrower in 1854, and made its first appearance on the London market in 1859. In the remaining States the first public loans were raised in the following years:—Queensland 1861, South Australia 1854, Western Australia 1845, and Tasmania 1867.

2. Nature of Securities.—All the earlier loans raised by the Australian States were obtained by the issue of debentures, some of which were repayable at fixed dates, and others by annual or other periodical drawings. In more recent years, however, the issue of debentures has given place to a great extent to that of inscribed stock, the inscription in the case of local issues being carried out by the State Treasuries, and in the cases of loans floated in London being mainly performed by the Bank of England and the London and Westminster Bank. The issue of debentures has not, however, been entirely discontinued, for within the last seven years debentures to a large amount have been placed on the market by the Government of New South Wales. In other States also, recent issues of debentures have taken place, the occasions usually being those in which the term of the loan is less than that ordinarily attaching to issues of

inscribed stock. Another form of security is that variously known as the Treasury bill or Treasury bond. This is usually merely a short term debenture having a currency in most instances of from three to five years. The bonds are issued in certain cases to liquidate deficiencies in revenue, and in others to obtain moneys for the purpose of carrying on public works at a time when it is deemed inexpedient to place a permanent loan on the market. The amount of the public debt of the several States held in each of these forms of security is furnished in the table hereunder :—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 30th JUNE, 1913.

State.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
New South Wales ...	6,636,450	98,784,297	750,000	...	106,170,747
Victoria ...	12,611,607	43,331,257	6,733,860	...	(a) 62,776,724
Queensland ...	14,803,889	37,713,794	...	1,087,050	53,604,733
South Australia ...	2,654,666	24,104,212	3,389,005	...	30,147,883
Western Australia ...	381,000	28,422,366	1,473,070	...	30,276,436
Tasmania ...	1,957,883	9,463,970	...	74,610	11,495,963
Total ...	39,044,995	241,819,896	12,345,935	1,161,660	(a) 294,472,486

(a) Includes an advance of £100,000 from Queensland Government to Victorian Government.

The manner in which the amount of public debt of the Australian States held under these various forms of security has grown during the past nine years will be seen from the following table :—

PUBLIC DEBT OF THE AUSTRALIAN STATES, 1903-4 to 1912-13.

Date.	Debentures.	Inscribed Stock.	Treasury Bills.		Total Amount Outstanding.
			For Public Works and Services.	In aid of Revenue.	
	£	£	£	£	£
30th June, 1904 ...	37,741,025	172,796,361	12,493,650	4,716,576	227,747,612
" 1905 ...	39,158,744	175,047,336	12,045,100	4,487,491	230,738,671
" 1906 ...	39,587,224	181,279,045	12,194,464	5,367,087	238,427,820
" 1907 ...	38,061,799	184,157,771	13,571,985	4,358,172	240,149,727
" 1908 ...	37,665,279	190,377,823	12,131,871	3,660,516	243,835,489
" 1909 ...	31,218,229	203,640,152	13,620,561	3,294,591	251,773,533
" 1910 ...	29,765,929	213,599,894	12,393,503	1,864,337	257,623,663
" 1911 ...	31,148,162	222,343,184	8,939,771	3,946,166	(a) 267,127,283
" 1912 ...	31,576,656	230,170,271	13,962,002	1,265,166	(b) 277,124,095
" 1913 ...	39,044,995	241,819,896	12,345,935	1,161,660	(c) 294,472,486

(a) Includes an advance of £750,000 from South Australian Government to Victorian Government. (b) Includes £150,000. balance of £750,000 referred to in Note (a). (c) Includes £100,000 advance from Queensland to Victorian Government.

During the period between 30th June, 1904, and 30th June, 1913, the public debt of the States increased by £66,724,874, or at the rate of about £7,400,000 per annum. The amount of debentures comprised in the total debt increased by £1,303,970 during the period, while the amount held as inscribed stock increased by £69,023,535 and that held as Treasury bills decreased by £3,702,631.

3. Increase in Indebtedness of the Several States.—The table given hereunder furnishes particulars of the increase which has taken place during the past nine years in the public debts of the several States :—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1904 to 1913.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
30th June, 1904 ...	80,033,581	51,819,962	41,773,297	28,593,645	16,000,268	9,498,539	227,747,612
" 1905 ...	82,321,998	51,763,767	41,764,467	28,773,695	16,642,773	9,471,971	230,738,671
" 1906 ...	85,641,734	53,079,800	41,764,467	30,082,635	18,058,553	9,800,631	238,427,820
" 1907 ...	85,607,832	53,104,989	41,764,467	30,526,718	19,222,638	9,923,083	240,149,727
" 1908 ...	87,635,826	53,305,487	42,264,467	29,985,858	20,493,618	10,150,293	243,835,489
" 1909 ...	90,307,419	54,667,197	44,276,067	30,436,183	21,951,753	10,134,914	251,773,533
" 1910 ...	92,525,095	55,576,725	44,276,067	31,387,870	23,287,453	10,570,453	257,623,663
" 1911 ...	95,523,926	57,983,764	44,613,197	34,224,653	23,703,953	11,077,790	267,127,283
" 1912 ...	100,052,635	60,737,216	47,068,186	31,680,124	26,283,523	11,302,411	277,124,095
" 1913 ...	106,170,747	62,776,724	53,604,733	30,147,883	30,276,436	11,495,963	294,472,486

The States in which the greatest increase in indebtedness was experienced during the period are New South Wales and Western Australia, the former advancing by £26,137,166, the latter by £14,186,148. On the other hand the public debt of Tasmania increased by only about £2,000,000.

4. **Indebtedness per Head.**—The indebtedness per head of population varies considerably in the several States, being highest in the case of Western Australia, and lowest in that of Victoria. Details for the period from 30th June, 1904, to 30th June, 1913, are as follows:—

PUBLIC DEBT OF AUSTRALIAN STATES PER HEAD, 30th JUNE, 1904 to 1913.

Date.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
30th June, 1904 ...	55 11 7	43 1 8	80 1 1	80 2 0	68 15 6	51 11 4	57 14 3
" 1905 ...	55 19 4	42 18 5	78 19 2	79 18 10	67 9 4	51 8 3	57 13 9
" 1906 ...	56 18 3	43 14 9	77 17 9	82 16 11	70 19 11	53 8 8	58 14 5
" 1907 ...	55 9 2	43 6 8	76 19 0	83 0 4	75 4 8	53 14 0	58 4 9
" 1908 ...	55 14 0	42 19 5	76 6 10	79 6 7	79 9 9	54 2 9	58 2 8
" 1909 ...	56 10 3	43 6 11	77 13 8	78 7 1	83 7 7	53 5 7	58 16 0
" 1910 ...	56 13 2	43 6 8	74 16 10	78 18 6	85 18 6	55 6 10	58 19 0
" 1911 ...	57 9 4	43 18 3	72 12 4	83 4 6	82 13 0	58 4 2	59 9 9
" 1912 ...	57 11 9	44 16 11	74 5 0	75 5 8	86 18 8	59 9 7	59 13 5
" 1913 ...	58 13 4	45 3 0	81 13 4	68 18 5	96 8 0	59 0 2	61 6 5

5. **Flotation of Loans.**—The early loans of the Australian States, usually for comparatively small amounts, were raised locally, but, with the increasing demand for loan funds and the more favourable terms offering in the London than in the local money market, the practice of placing Australian public loans in London came into vogue, and for many years local flotations, except for short terms or small amounts, were comparatively infrequent. In more recent years, however, the accumulating stocks of money in Australia seeking investment have led to the placing of various redemption and other loans locally, with very satisfactory results. In the following table are given particulars of loans of the several States outstanding on 30th June, 1913, which had been floated in London and Australia respectively:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1913.

State.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
New South Wales ...	73,740,413	69.45	32,430,334	30.55	106,170,747
Victoria ...	37,281,578	59.39	25,495,146	40.61	62,776,724
Queensland ...	44,250,347	82.55	9,353,786	17.45	53,604,733
South Australia ...	17,001,866	56.89	13,146,017	43.61	30,147,883
Western Australia ...	24,099,753	79.60	6,176,683	20.40	30,276,436
Tasmania ...	8,020,572	69.77	3,475,391	30.23	11,495,963
Total ...	204,395,129	69.41	90,077,357	30.59	294,472,486

The following table, giving corresponding particulars for the aggregate indebtedness of the Australian States at the end of each of the financial years 1903-4 to 1912-13, furnishes an indication of the rapidity with which the local holdings of Australian securities have grown in recent years:—

PUBLIC DEBT OF AUSTRALIAN STATES, 30th JUNE, 1904 to 1913.

Date.	Floated in London.		Floated in Australia.		Total Public Debt.
	Amount.	Percentage on Total Debt.	Amount.	Percentage on Total Debt.	
	£	%	£	%	£
30th June, 1904 ...	188,165,495	82.62	39,582,117	17.38	227,747,612
" 1905 ...	188,918,820	81.88	41,819,851	18.12	230,738,671
" 1906 ...	190,887,001	80.06	47,540,819	19.94	238,427,820
" 1907 ...	185,579,389	77.28	54,570,338	22.72	240,149,727
" 1908 ...	183,321,256	75.18	60,514,233	24.82	243,835,489
" 1909 ...	189,410,036	75.23	62,363,497	24.77	251,773,533
" 1910 ...	191,972,479	74.52	65,651,184	25.48	257,623,663
" 1911 ...	189,067,671	70.78	78,059,612	29.22	267,127,283
" 1912 ...	192,190,771	69.35	84,933,324	30.65	277,124,095
" 1913 ...	204,395,129	69.41	90,077,357	30.59	294,472,486

It will be seen that in the course of nine years the London indebtedness of the States has increased by £16,229,634, while the local indebtedness has increased by no less than £50,495,240. In other words, whilst on 30th June, 1904, the Australian portion of the debt represented only about 17 per cent. of the total, the proportion had on 30th June, 1913, grown to 31 per cent.

6. **Rates of Interest.**—As mentioned above, the highest rate of interest paid in connection with the earliest Australian public loans was fivepence farthing per £100 per diem or, approximately, 8 per cent. per annum. At the present time the principal rates of interest payable on Australian public securities are 4 per cent., 3½ per cent. 3¼ per cent., and 3 per cent. The average rate payable on the aggregate indebtedness of the Australian States is about 3½ per cent. For the separate States the average rate payable varies considerably, being lowest in the case of Western Australia and highest in that of Queensland and Tasmania; the difference between these two average rates is ½ per cent. In the table given hereunder particulars are furnished of the rates of interest payable on the public debt of the several States of the Commonwealth on 30th June, 1913:—

RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE, 1913.

Rate of Interest.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
%	£	£	£	£	£	£	£
6 ...	...	...	...	109,900	...	...	109,900
5 ...	2,700	...	...	140,000	...	...	142,700
4½ ...	...	...	...	...	42,900	...	42,900
4¼ ...	...	100,000	...	...	...	...	100,000
4 ...	24,538,655	15,375,117	26,021,940	8,848,031	8,135,321	4,592,788	87,511,852
3¾ ...	13,514,093	248,000	2,560,050	8,308,210	2,112,070	1,123,011	27,855,439
3½ ...	51,056,302	36,759,065	19,540,760	6,815,009	12,636,145	5,301,378	132,108,659
3¼ ...	...	...	...	...	...	24,718	24,718
3 ...	17,047,072	10,293,542	5,489,383	5,925,733	7,350,000	454,068	46,560,798
Not bearing interest	11,920	1,000	2,600	...	...	...	15,520
Total public debt ...	106,170,747	62,776,724	53,604,733	30,147,883	30,276,436	11,495,963	294,472,486
Average rate per cent. payable ...	£ s. d. 3 11 4	£ s. d. 3 10 9	£ s. d. 3 14 1	£ s. d. 3 12 8	£ s. d. 3 10 8	£ s. d. 3 14 1	£ s. d. 3 11 11

The rapid increase which has taken place in recent years in the amount of Australian Government securities, bearing interest at $3\frac{1}{2}$ per cent., is clearly shewn in the table hereunder, which gives particulars concerning the aggregate amount of the Australian indebtedness, at the several rates of interest, on 30th June, in each of the years 1909 to 1913:—

**RATES OF INTEREST PAYABLE ON PUBLIC DEBT OF STATES, 30th JUNE,
1909 TO 1913.**

Rate of Interest.	30th June, 1909.	30th June, 1910.	30th June, 1911.	30th June, 1912.	30th June, 1913.
%	£	£	£	£	£
6	269,800	209,500	191,200	156,200	109,900
5	242,700	242,700	192,700	142,700	142,700
$4\frac{1}{2}$	55,900	52,800	49,700	46,400	42,900
$4\frac{1}{4}$	...	...	...	...	100,000
4	80,403,472	76,983,242	71,433,697	70,204,992	87,511,852
$3\frac{3}{4}$	5,218,435	10,596,757	21,587,696	26,251,486	27,855,439
$3\frac{1}{2}$	117,970,370	121,987,932	126,678,118	133,631,321	132,108,639
$3\frac{1}{4}$	124,718	75,000	74,718	49,718	24,718
3	47,472,888	47,161,895	46,909,879	46,636,738	46,560,798
Not bearing interest	15,250	13,837	9,575	4,550	15,520
Total public debt	251,773,533	257,623,663	267,127,263	277,124,095	294,472,486
Average rate % payable	£3 11 6	£3 11 5	£3 11 4	£3 11 4	£3 11 11

During the four years between 30th June, 1909, and 30th June, 1913, the Australian State Government 4 per cent. securities increased by £7,108,380, and the 3 per cent. securities decreased by £912,090, while the $3\frac{1}{2}$ per cents. advanced by £14,138,289, and the $3\frac{3}{4}$ per cents. by £22,637,004. During the same period the total amount at all other rates than the four here mentioned declined by about 54 per cent.

7. Interest Payable per Head.—The relative burden of the debts of the several States in respect of interest payments will be seen from the following table, which gives for the 30th June, 1913, the amount of interest payable annually on the debt of each State as outstanding at that date, and also the corresponding amount per head of population:—

**ANNUAL INTEREST PAYABLE ON PUBLIC DEBT OUTSTANDING AT 30th
JUNE, 1913.**

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
	£	£	£	£	£	£	£
Total annual interest payable ...	3,516,233	2,154,806	1,844,096	1,040,138	963,412	390,433	9,909,118
Annual interest payable per head ...	£1 18 10	£1 11 0	£2 16 2	£2 7 6	£3 1 4	£2 0 2	£2 1 3

8. Dates of Maturity.—An important point in which the securities of the Australian Governments, whether in the form of inscribed stock, debentures, or Treasury bills, differ from such a well-known form of security as British consols, consists in the fact that whereas the latter are interminable, the Australian Government securities have in almost all cases a fixed date for repayment, the exceptions being the State of New South Wales, which includes in its public debt an amount representing interminable securities totalling on 30th June, 1913, £532,890; also £7,395,208 redeemable by Government on giving 12 months' notice; the State of Victoria, which includes £4,723,324 and £328,362 due in 1931, payable at the option of the Government at any time after 29th September, 1917; also £100,000 for which date is not fixed; and the State of South Australia, which includes £5,089,034 similarly repayable. The terms of the loans raised by the issue of debentures and inscribed stock have varied considerably in the different States, ranging between fifteen and fifty years, while loans obtained by means of Treasury

bills have usually been for such short terms as from six months to five years. In the case of the majority of the loans the arrival of the date of maturity means that arrangements for renewal are necessary in respect of the greater portion of the loan, as it is only in exceptional cases that due provision for redemption has been made. The condition of the money market at the date of maturity has an important bearing on the success or otherwise with which the renewal arrangements can be effected, and consequently, in order to obviate the necessity for making an application to the market at an unfavourable time, several of the States have now adopted the practice of specifying a period of from ten to twenty years prior to the date of maturity within which the Government, on giving twelve, or in some cases six, months' notice, has the option of redeeming the loan. By such means advantage may be taken by the Government during the period of opportunities that may offer for favourable renewals. Particulars concerning the due dates of the loans of the several States outstanding on 30th June, 1913, are given in the following table:—

**DUE DATES OF THE PUBLIC DEBTS OF THE SEVERAL STATES OF THE
COMMONWEALTH OUTSTANDING ON 30th JUNE, 1913.**

Due Dates.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
	£	£	£	£	£	£	£
Overdue ...	11,920	1,000	2,600	...	...	...	15,520
1913 ...	...	1,988,000	...	423,889	850,000	406,484	3,668,373
1914 ...	750,000	30,000	1,000,000	784,942	300,000	1,192,230	4,037,172
1915 ...	3,881,081	530,000	11,728,800	303,854	85,840	220,084	16,749,659
1916 ...	...	2,797,000	...	2,472,662	262,070	305,907	5,837,639
1917 ...	1,224,350	3,044,860	...	2,148,162	311,000	235,487	6,963,859
1918 ...	12,826,200	58,000	...	2,192,354	...	141,068	15,217,622
1919 ...	11,083,945	4,842,650	...	682,519	...	2,400	16,611,514
1920 ...	...	6,017,500	...	589,111	...	302,148	6,908,759
1921 ...	4,872,543	2,593,200	119,100	1,035,325	...	637,396	9,257,864
1922 ...	4,500,000	4,008,850	1,085,850	745,188	...	17,326	10,357,214
1923 ...	4,735,690	7,943,005	...	275,531	556,550	50	13,510,826
1924 ...	16,698,065	...	12,973,834	741,190	664,530	...	31,077,619
1925 ...	222,255	...	...	11,224	...	5,050	238,529
1926 ...	...	5,103,000	...	1,024,764	1,922,305	39,600	8,089,669
1927 ...	...	202,000	...	570,651	2,500,000	...	3,272,651
1928 ...	...	897,500	40,000	736,708	...	...	1,674,208
1929 ...	...	377,500	...	202,645	...	300,000	880,145
1930 ...	...	1,754,850	3,804,100	300,275	...	100	5,859,325
1931 ...	...	1,061,648	...	450	...	...	1,062,098
1932 ...	...	976,650	...	1,225	1,380,540	...	2,358,415
1933 ...	9,686,300	...	...	368,912	493,848	39,207	10,588,267
1934 ...	...	...	...	1,043,421	997,853	39,207	2,080,481
1935 ...	12,500,000	...	...	1,478,499	8,280,000	39,207	22,297,706
1936 ...	...	300,000	...	4,250,390	1,100,000	39,207	5,689,587
1937 ...	...	...	...	15,586	...	39,207	54,793
1938 ...	...	...	87,907	92,383	...	39,207	219,497
1939 ...	...	...	...	2,560,999	...	39,207	2,600,206
1940 ...	...	248,900	...	6,000	...	5,645,707	5,900,607
1941 ...	...	324,380	...	...	...	39,207	363,587
1942 ...	...	485,100	...	...	...	39,207	524,307
1943 ...	...	3,600	...	...	...	39,207	42,807
1944 ...	...	400	...	...	...	39,207	39,607
1945 ...	...	...	6,444,440	...	...	39,207	6,483,647
1946 ...	...	217,400	...	...	...	39,207	256,607
1947 ...	...	...	4,498,693	...	2,000,000	39,207	6,537,900
1948 ...	...	...	...	...	...	39,207	39,207
1949 ...	...	11,694,171	...	...	...	39,207	11,733,378
1950 ...	12,250,000	...	2,946,600	...	...	1,339,207	16,535,807
1951 ...	...	...	999,600	...	...	39,207	1,038,807
1952 ...	...	...	125,400	...	...	39,200	164,600
1953 ...	...	...	1,747,809	...	...	...	1,747,809
1954 ...	...	133,874	...	...	...	...	133,874
1955 ...	...	...	...	...	4,437,000	...	4,437,000
1960 ...	...	...	...	...	1,000,000	...	1,000,000
1962 ...	3,000,000	...	...	...	3,000,000	...	6,000,000
1970 ...	...	...	6,000,000	...	...	...	6,000,000
Interminable ...	582,890	...	...	...	...	...	582,890
Annual drawings ...	...	...	...	...	134,900	...	134,900
Indefinite ...	7,395,208	5,151,686	...	5,089,034	...	...	17,635,928
Total ...	106,170,747	62,776,724	53,604,733	30,147,883	30,276,436	11,495,963	294,472,486

In the above table those loans in the case of which the Government has the option of redemption during a specified period, have been in each instance classified according to the latest date of maturity.

9. Sinking Funds.—The practice of providing for the ultimate extinction of the public debt by means of the creation of sinking funds, receiving definite annual contributions from Consolidated Revenue, and accumulating at compound interest, has only been consistently adopted in the case of Western Australia. This State has established, in connection with each of its loans, sinking funds varying from 1 per cent. to 3 per cent. per annum of the nominal amount of the loan. These funds are placed in the hands of trustees in London, by whom they are invested in the securities of the British, Indian, and Colonial Governments, and applied from time to time in the redemption of loans falling due. In the remaining States the sinking fund provision made is varied, consisting in certain instances of the revenues from specified sources, in others of the Consolidated Revenue Fund surplus, and in others again of fixed annual amounts. In the following table are given particulars of the sinking funds of each State, and the net indebtedness of each after allowance for sinking fund has been made, the details given being those for 30th June, 1913 :—

STATES SINKING FUNDS AND NET INDEBTEDNESS, 30th JUNE, 1913.

State.	Gross Indebtedness.	Sinking Fund.	Net Indebtedness.	Net Indebtedness per head.
	£	£	£	£ s. d.
New South Wales ...	106,170,747	381,893	105,788,854	58 9 2
Victoria ...	62,776,724	1,226,667	61,550,057	44 5 4
Queensland ...	53,604,733	51,347	53,553,386	81 12 2
South Australia ...	30,147,883	299,567	29,848,316	68 4 8
Western Australia ...	30,276,436	3,309,346	26,967,090	85 18 0
Tasmania ...	11,495,963	496,031	10,999,932	56 11 0
Total ...	294,472,486	5,764,851	288,707,635	60 2 5

10. London Prices of Australian Stocks.—In examining the prices quoted for Australian State Government securities, particularly if the examination is made with the object of comparing the prices at a given time of different stocks, or the prices at different times of the same stock, several points in connection with the securities need to be kept in view; the principal of these are—(a) the rate of interest payable, (b) the date of maturity, and (c) the date at which interest is payable.

In the following table particulars are given of the London prices of some of the principal $3\frac{1}{2}$ per cent. stocks of the several States during 1913. The quotations given are the middle prices, taken from the *Economist*, and are for the last Friday in each quarter :—

LONDON QUOTATIONS FOR AUSTRALIAN $3\frac{1}{2}$ PER CENT. STOCKS DURING 1913.

State.	Rate of Interest Payable.	Year of Maturity.	Months in which Interest is Payable.	London Prices (cum dividend) on—			
				29th Mar. 1913.	28th June 1913.	27th Sept. 1913.	27th Dec. 1913.
	%						
New South Wales	$3\frac{1}{2}$	1918	Mar.—Sept.	96	97 $\frac{1}{2}$	98	98
Victoria ...	$3\frac{1}{2}$	1923	Jan.—July	94	93	94	93
Queensland ...	$3\frac{1}{2}$	1924-30	Jan.—July	94	90	93	...
South Australia ...	$3\frac{1}{2}$	1939	Jan.—July	91	89	89	88
Western Australia	$3\frac{1}{2}$	1915-35	May—Nov.	90	88	90	89
Tasmania ...	$3\frac{1}{2}$	1920-40	Jan.—July	89	88	89	87

Throughout the year the prices of Australian $3\frac{1}{2}$ per cent. stocks on the London market were, on the average, slightly less than those for the corresponding periods of the preceding year.

SECTION XXI.

PRIVATE FINANCE.

§ 1. Currency.

1. **The Three Australian Mints.**—Soon after the discovery of gold in Australia steps were taken for the establishment of a branch of the Royal Mint in Sydney. The formal opening took place on the 14th May, 1855, the mint being located in the southern part of the building once known as the "rum hospital," where it has remained up to the present. It is now proposed, however, to erect more suitable buildings for its accommodation in some other part of the city. The Melbourne branch of the Royal Mint was opened on the 12th June, 1872, and the Perth branch on the 20th June, 1899. The States of New South Wales, Victoria, and Western Australia provide an annual endowment, in return for which the mint receipts are paid into the respective State Treasuries, and it may be said that, apart from expenditure on buildings, new machinery, etc., the amounts paid into the Treasuries fairly balance the mint annuities.

2. **Receipts and Issues in 1912.**—(i.) *Assay of Deposits Received.* The number of deposits received during 1912 at the Sydney Mint was 1160, of a gross weight of 637,392 ozs.; at the Melbourne Mint, 2838, of a gross weight of 657,292 ozs.; and at the Perth Mint, 4779, of a gross weight of 1,479,079 ozs. The average composition of these deposits in Sydney was, gold 869.6, silver 88.0, base 42.4 in every 1000 parts; Melbourne, gold 915.2, silver 44.0, base 40.8 in every 1000 parts; and Perth, gold 815.0, silver 122.5, base 62.5 in every 1000 parts. As many parcels have, however, undergone some sort of refining process before being received at the mint, the average assay for gold shews higher in these figures than for gold as it naturally occurs.

(ii.) *Receipts.* Practically all the gold coined at the Australian mints is the produce of either the Commonwealth or of the Dominion of New Zealand. The following table shews the origin of the gold received at the three mints during 1912:—

ORIGIN OF GOLD RECEIVED AT MINTS DURING 1912.

Origin of Gold.	Sydney Mint.	Melbourne Mint.	Perth Mint.
	ozs.	ozs.	ozs.
New South Wales	119,262.51	4,394.90	...
Victoria	...	510,438.04	...
Queensland... ..	318,283.63	5,415.75	...
South Australia	...	10,165.79	...
Western Australia	106.40	6,905.53	1,478,532
Tasmania	1,729.99	24,886.70	...
Northern Territory	1,239.10	...	145
New Zealand	192,980.07	85,222.51	...
Other countries, origin not stated, and light gold coin	3,790.64	9,863.35	402
Total	637,392.34	657,292.57	1,479,079

It will be seen that practically all gold produced in New South Wales and Queensland, and about seven-tenths of that produced in New Zealand, found its way to the Sydney Mint, while the Melbourne Mint received all Victorian and South Australian gold, together with nearly all of the Tasmanian and about three-tenths of the New Zealand production, and the Perth Mint coined practically all Western Australian gold with the exception of a small portion sent to Sydney and Melbourne.

(iii.) *Issues.* The Australian mints, besides issuing gold coin in the shape of sovereigns and half-sovereigns, also issue gold bullion, partly for the use of local manufacturers (jewellers and dentists), and partly for export, India taking annually a considerable quantity of gold cast into 10-oz. bars. The issues during 1912 are shewn in the table below:—

ISSUES OF GOLD FROM MINTS DURING 1912.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	2,227,000	139,000	2,366,000	38,136	2,404,136
Melbourne ...	2,469,257	...	2,469,257	86,307	2,555,564
Perth ...	4,278,144	...	4,278,144	842,318	5,120,462
Total ...	8,974,401	139,000	9,113,401	966,761	10,080,162

In addition to the issue of gold the Mints are also charged with the issue of silver and bronze coin struck in London. There was, however, no issue of either Imperial silver or bronze coin in 1912.

(iv.) *Withdrawals of Worn Coin.* The mints receive light and worn coin for recoinage, gold being coined locally, while silver is forwarded to London. The value of gold coin so received in 1912 amounted to £23,137, viz.:—Sydney, £11,044; Melbourne, £12,090; and Perth, £3. The value of worn silver coins received during 1912 was £37,199, viz.:—Sydney, £22,956; Melbourne, £5605; and Perth, £8638.

3. **Total Receipts and Issues.** (i.) *Receipts.* The total quantities of gold received at the three mints since their establishment are stated in the gross as follows:—Sydney, 35,728,342.24 ozs.; Melbourne, 35,019,732.75 ozs.; and Perth, 17,750,658 ozs. As the mints pay for standard gold (22 carats) at the rate of £3 17s. 10½d. per oz., which corresponds to a value of £4 4s. 11½d. per oz. fine (24 carats), it is possible to arrive at the number of fine ounces received from the amounts paid for the gold received. These amounts were:—Sydney, £131,767,636; Melbourne, £137,877,194; Perth, £62,510,926; corresponding to—Sydney, 31,020,738 ozs. fine; Melbourne, 32,459,050 ozs. fine; and Perth, 14,716,323 ozs. fine. Silver found in assaying is paid for if it exceeds 8 per cent.; in Sydney it has been paid for at the rate of one shilling and sixpence per oz. fine since 12th May, 1902; in Melbourne the price is fixed monthly by the Deputy-master of the Mint; and in the Perth accounts it has been taken at one shilling per oz.

(ii.) *Issues.* The total values of gold coin and bullion issued by the three mints were as shewn in the table on page 737. It may be said that rather more than one-half of the total gold production of Australasia has passed through the three Australian mints, the production of the Commonwealth States to the end of 1912 being valued at £546,076,909, and that of New Zealand at £80,599,044, or a total of £626,675,953.

TOTAL ISSUES OF GOLD FROM MINTS TO END OF 1912.

Mint.	Coin.			Bullion.	Total.
	Sovereigns.	Half-sovereigns.	Total.		
	£	£	£	£	£
Sydney ...	121,357,500	3,950,000	125,307,500	6,481,672	131,789,172
Melbourne ...	126,632,340	883,948	127,516,288	10,363,162	137,879,450
Perth ...	56,357,166	189,235	56,546,401	5,951,302	62,497,703
Total ...	304,347,006	5,023,183	309,370,189	22,796,136	332,166,325

The total issues of silver coins to the end of 1912 were £2,415,200, viz.:—Crowns, £3500; double florins, £4585; half-crowns, £722,600; florins, £528,215; shillings, £606,200; sixpences, £253,220; and threepences, £296,880.

Bronze coins to the value of £180,150 have been issued, viz.:—Pence, £126,640; half-pence, £53,310; and farthings, £200.

(iii.) *Withdrawals of Worn Coin.* Complete figures as to the withdrawal of gold coin can be given for the Sydney Mint, where they amounted to £1,081,210; at the Melbourne Mint the coins withdrawn since 1890 were worth £509,802. In the case of Perth the withdrawal of worn gold coin since the opening of the Mint amounted to £422.

Withdrawals of worn silver coin amounted to £926,490 in Sydney, to £367,729 in Melbourne, and to £20,888 in Perth.

4. **Standard Weight and Fineness of Coinage.**—The coinage of the Commonwealth is the same as that of the United Kingdom, and the same provisions as to legal tender hold good, viz., while gold coins are legal tender to any amount, silver coins are only so for an amount not exceeding forty shillings, and bronze coins up to one shilling. As will be seen from the table below, the standard weights of the sovereign and half-sovereign are respectively 123.27447 grains and 61.63723 grains, but these coins will pass current if they do not fall below 122.5 grains and 61.125 grains respectively.

STANDARD WEIGHT AND FINENESS OF COMMONWEALTH COINAGE.

Denomination.	Standard Weight.	Standard Fineness.
	Grains.	
GOLD—		
Sovereign ...	123.27447	Eleven-twelfths fine gold, viz.:— Gold ... 0.91667 } 1.00000 Alloy ... 0.08333 }
Half-sovereign ...	61.63723	
SILVER—		
Crown ...	486.36363	Thirty-seven-fortieths fine silver, viz.:— Silver ... 0.925 } 1.000 Alloy ... 0.075 }
Double florin ...	349.09090	
Half-crown ...	218.18181	
Florin ...	174.54545	
Shilling ...	87.27272	
Sixpence ...	43.63636	
Threepence ...	21.81818	
BRONZE—		
Penny ...	145.83333	Mixed metal, viz.:— Copper ... 0.95 } 1.00 Tin ... 0.04 } Zinc ... 0.01 }
Half-penny ...	87.50000	
Farthing ...	43.75000	

5. **Prices of Silver and Australian Coinage.**—(i.) *Prices of Silver.* The value of silver has greatly decreased since its demonetisation and restricted coinage in almost the whole of Europe. Its average price in the London market in recent years is shewn in the subjoined table:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1874 to 1912.

Year.	Price per Standard Oz.	Year.	Price per Standard Oz.	Year.	Price per Standard Oz.
	d.		d.		d.
1874 ...	58.3125	1887 ...	44.6250	1900 ...	28.3125
1875 ...	56.8125	1888 ...	42.8750	1901 ...	27.2500
1876 ...	53.0000	1889 ...	42.6875	1902 ...	24.1250
1877 ...	54.7500	1890 ...	47.7500	1903 ...	24.7500
1878 ...	52.5625	1891 ...	45.0625	1904 ...	26.3750
1879 ...	51.1875	1892 ...	39.8125	1905 ...	27.8125
1880 ...	52.2500	1893 ...	35.6250	1906 ...	30.8750
1881 ...	51.7500	1894 ...	29.0000	1907 ...	30.1875
1882 ...	51.8125	1895 ...	29.8750	1908 ...	24.3750
1883 ...	50.5625	1896 ...	30.7500	1909 ...	23.6875
1884 ...	50.6875	1897 ...	27.5625	1910 ...	24.6875
1885 ...	48.6250	1898 ...	26.9375	1911 ...	24.5625
1886 ...	45.3750	1899 ...	27.5000	1912 ...	28.0625

The monthly fluctuations during the year 1912 were as follows:—

AVERAGE PRICE OF SILVER IN LONDON MARKET, 1912.

Month.	Price per Standard Oz.	Month.	Price per Standard Oz.	Month.	Price per Standard Oz.
	d.		d.		d.
January ...	25.1250	May ...	28.1875	September ...	28.8125
February ...	26.8750	June ...	28.0000	October ...	29.5000
March ...	27.1250	July ...	28.1875	November ...	28.8750
April ...	26.7500	August ...	27.8750	December ...	29.6875

(ii.) *Profits on Coinage of Silver.* As sixty-six shillings are coined out of one pound troy of standard silver, the silver required to produce £3 6s. of coin was only worth £1 8s. 1d. during 1912; the difference of £1 17s. 11d. represents, therefore, the gross profit or seigniorage made on the coinage of every £3 6s. This gross profit is equivalent to over 35 per cent., but from it the expenses of coining (including interest on cost of machinery) and of withdrawals of worn coin must be deducted. Still, given a large annual demand for new silver coin, even the net profit amounts to a considerable sum. Negotiations, therefore, took place for a number of years between the Imperial authorities and the Governments of New South Wales and Victoria, which in 1898 resulted in permission being granted to the two Governments named to coin silver and bronze coin at the Sydney and Melbourne Mints for circulation in Australia. No steps were, however, taken in the matter, and as section 51 of the Commonwealth Constitution makes legislation concerning "currency, coinage, and legal tender" a federal matter, the question remained in abeyance until the latter part of 1908, when the Commonwealth Treasurer announced his intention of initiating the coinage of silver in the near future.

(iii.) *Coinage Bill.* In 1909 a coinage bill was introduced in the Commonwealth Parliament, which provided that the future Australian coinage should consist of the following coins:—In gold, £5, £2, £1, and 10s.; in silver, 2s., 1s., 6d., and 3d.; and in bronze, 1d. and $\frac{1}{2}$ d. Gold was to be legal tender up to any amount, silver up to 40s., and bronze up to 1s. Ultimately the coinage was to be undertaken in Australia, but for the time an agreement was made with the authorities of the Royal Mint in London, under the terms of which the coinage was to be done in London on account of the Commonwealth Government. Orders were given for the immediate coinage of £200,000

worth of silver, viz., one million florins, one million shillings, one million sixpences, and two million threepences. The coins bear on the obverse H.M. the King's head, with the Latin inscription which appears on the British coins, and on the reverse the Australian coat-of-arms, with the denomination and the date. The Imperial authorities undertook to withdraw £100,000 worth of the present silver-coinage per annum at its face value. The first consignment of the new coinage arrived in Australia early in 1910, and in a short time all the silver coins contracted for were supplied to the Royal mints, Australia. Copper coins of the value of £10,000, viz., 1,560,000 pennies and 1,680,000 half-pennies, of a design similar to that of the silver coins, were ordered. It is not, however, intended to withdraw any of the present copper coins, but merely to make good the "leakage," which is considerable. Possibly the time is not far distant when the copper coinage will be replaced by a nickel coinage.

The issue of Australian coin in 1912 was as follows:—Sydney, £69,600 silver, and £12,510 bronze; Melbourne, £52,200 silver; and Perth, £18,400 silver, and £1,020 bronze.

6. For information concerning the imports into the Commonwealth and exports from the Commonwealth of coin and bullion during the year 1912, the enquirer is referred to the tables on pages 541 and 542.

§ 2. Banking.

1. Banking Facilities.—(i.) *Head Offices of Banks.* Of the twenty-four banks trading in the Commonwealth, four have their head offices in London, viz., the Bank of Australasia; the Union Bank of Australia Limited; the English, Scottish and Australian Bank Limited; and the London Bank of Australia Limited. The head offices of the following five banks are in Sydney—The Commonwealth Bank of Australia, The Bank of New South Wales, the Commercial Banking Company of Sydney Limited, the Australian Joint Stock Bank Limited (now the Australian Bank of Commerce Limited), and the City Bank of Sydney. Five banks have their head offices in Melbourne, viz., the National Bank of Australasia Limited, the Commercial Bank of Australia Limited, the Bank of Victoria Limited, the Colonial Bank of Australasia Limited, and the Royal Bank of Australia Limited. Brisbane is the headquarters of three banks, viz., the Queensland National Bank Limited, the Royal Bank of Queensland Limited, and the Bank of North Queensland Limited. Only one bank has at present its head office in Adelaide, viz., the Bank of Adelaide; and one in Perth, viz., the Western Australian Bank. Of the two Tasmanian banks the Commercial Bank of Tasmania Limited has its head office in Hobart, and the National Bank of Tasmania Limited in Launceston. The Bank of New Zealand has its headquarters in Wellington. Of the two remaining banks—the Comptoir National d'Escompte has its head office in Paris, and the Ballarat Banking Company in Ballarat. It is proposed, in the few instances where the banks are referred to by name, to arrange them in the order just given, except that the Commonwealth Bank comes first.

2. Banking Legislation.—Under Section 51 of the Commonwealth Constitution Act the Commonwealth Parliament has power to legislate with respect to "Banking, other than State banking, also State banking extending beyond the limits of the State concerned, the incorporation of banks, and the issue of paper money." Until quite recently the only Commonwealth banking legislation passed was Act No. 27 of 1909, "An Act relating to Bills of Exchange, Cheques, and Promissory Notes," which came into force on the 1st of February, 1910. In the session of 1910, however, two Acts relating to banking were passed by the Federal Parliament. The first was the Australian Notes Act No. 11 of 1910, assented to on the 16th September, 1910, and proclaimed 1st November, 1910; and the second the Bank Notes Tax Act No. 14 1910, assented to on 10th October, 1910, and proclaimed 1st July, 1911. Under the first of these Acts the Commonwealth Treasurer is empowered to issue notes which shall be legal tender throughout the Commonwealth, and redeemable at the seat of Federal Government.

The notes are issued in denominations of 10s., £1, £5, £10, £20, £50, and £100. The Act directs the Treasurer to hold the following reserve of gold coin:—

- (a) An amount not less than one-fourth of the amount of Australian notes issued up to seven million pounds;
- (b) An amount equal to the amount of Australian notes issued in excess of seven million pounds.

For the purpose of estimating the reserve, notes which have been redeemed are not included amongst those issued.

The portion of the Act relating to the reserve has been amended by Act No. 21 of 1911, which was assented to on 22nd December, 1911. According to this amending Act the clause relating to the reserve now reads as follows:—"The Treasurer shall hold in gold coin a reserve of not less than one-fourth of the amount of Australian notes issued." It was intended that this amendment should come into force on 1st July, 1912, but the Federal Treasurer afterwards announced that its operation would be deferred until after the Commonwealth elections of 1913. These elections resulted in the return to power of another administration, and the new Treasurer, Sir John Forrest, has announced his intention of maintaining the reserve at the rate provided for in the original Act during his tenure of office.

The Australian Notes Act prohibits the circulation of notes issued by a State six months after the commencement of the Act, and such notes will then cease to be legal tender. In addition the Bank Notes Act imposes a tax of 10 per cent. per annum in respect of all bank notes issued or re-issued by any bank in the Commonwealth after the commencement of this Act and not redeemed.

The Notes Act and the Bank Notes Act were supplemented in the following year by the passing of No. 18 of 1911, "An Act to provide for a Commonwealth Bank," which passed both Houses and was assented to on 22nd December, 1911. The bank thus authorised has no power to issue notes, but in every other respect it has the functions of an ordinary bank of issue. It is managed by a governor and a deputy-governor, who are appointed by the Governor-General and will hold office during good behaviour for a period of seven years, after which they will be eligible for reappointment. A novel feature is the establishment of a department dealing with savings bank business only. No further reference need be made here to this department, which is dealt with in detail in § 5. The framers of the Act have largely followed the lines laid down by the respective State Savings Bank Acts, particularly the Western Australian Act No. 9 of 1906. The capital of the bank is one million pounds, to be raised by the issue and sale of debentures. These debentures are for ten pounds or some multiple of ten pounds and redeemable at par, the Commonwealth guaranteeing interest and principal. All expenses incidental to the establishment of the bank are met by an advance from the Consolidated Revenue Fund, such advance to be ultimately repaid with interest at the rate of three-and-a-half per cent.

The first step in the organisation of the Bank was the appointment as Governor, from 1st June, 1912, of Mr. Denison Miller, of the Bank of New South Wales. Mr. James Kell, of the Bank of Australasia, was subsequently appointed Deputy-Governor, and the Bank was formally opened on 20th January, 1913, for the transaction of all general banking business. The result of the first day's operations was the deposit of £2,341,720, the bulk of which consisted of funds belonging to various departments of the Commonwealth Government. The opening of branches simultaneously at Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart, Townsville, Canberra, and London, marked the accomplishment of the provisions of the Commonwealth Bank Act of 1911. The Savings Bank Department, which came into existence six months previously, is dealt with in detail in the section on Savings Banks.

Under the existing laws, banks are required to furnish quarterly statements of their average assets and liabilities, but these statements are not equally complete in all the States. Until the close of 1907 these quarterly statements, together with

the periodical balance-sheets of the banks (generally half-yearly, but in a few cases yearly), were the only information available in regard to banking business. During the year 1908 the Commonwealth Statistician, under the provisions of the Census and Statistics Act, asked the banks for quarterly returns giving slightly more detailed information than had previously been obtained. As, however, a few of the banks have found it impossible up to the present to give all the particulars required, while promising to do so in future, the returns for the years subsequent to 1907 have been practically left in the same condition as those for 1907 and previous years.

The Acts under which the various banks are incorporated are not all of the same nature, but it may be stated that while most of the older banks were incorporated by special Acts, *e.g.*, the Bank of New South Wales, by Act of Council 1817; the Bank of Australasia, by Royal Charter; the Bank of Adelaide, by Act of the South Australian Parliament; and the Bank of New Zealand, by Act of the General Assembly of New Zealand, the newer banks are generally registered under a "Companies Act," or some equivalent Act. This is also the case with those banks which, after the crisis of 1893, were reconstructed.

3. **Capital Resources of Banks.**—The paid-up capital of the cheque-paying banks, together with their reserve funds, the rate per cent., and the amount of their last dividends, is shewn in the table hereunder. The information relates to the balance-sheet last preceding the 30th June, 1913. In regard to the reserve funds it must be stated that in the case of some of the banks these are invested in Government securities, while in other cases they are used in the ordinary business of the banks, and in a few instances they are partly invested and partly used in business.

CAPITAL RESOURCES OF CHEQUE-PAYING BANKS, 1912-1913.

Bank.	Paid-up Capital.	Rate per cent. per annum of last Dividend and Bonus.	Amount of last ½-yrly. Dividend & Bonus.	Amount of Reserved Profits.
	£	%	£	£
Commonwealth Bank of Australia ...	1,600,000	14 & 12/- bonus ps.	136,000	2,010,000
Bank of Australasia ...	1,500,000	14	105,000	1,493,349
Union Bank of Australia Limited ...	539,438	8	43,155 ⁷	282,434
English, Scottish and Australian Bank Limited ...	548,393 ¹	7 Preferen. 5 Ordinary	30,449 ⁷	195,093
London Bank of Australia Limited ...	3,253,540	10	156,339	2,250,000
Bank of New South Wales ...	1,750,000	10	87,383	1,630,000
Commercial Banking Company of Sydney Limited ...	1,195,399	3	17,929	3,619
Australian Bank of Commerce Limited ...	400,000	5	10,000	26,116
City Bank of Sydney ...	1,498,220 ⁴	7	52,138	435,000
National Bank of Australasia Limited ...	2,212,994 ³	3 Preference	31,760	6,360
Commercial Bank of Australia Limited ...	1,478,010 ⁴	6	44,340	337,843
Bank of Victoria Limited ...	439,281	7	15,375	203,894
Colonial Bank of Australasia Limited ...	300,000	8	12,000	195,459
Royal Bank of Australia Limited ...	413,418 ⁵	...	...	...
Queensland National Bank Limited ...	544,160	5	13,565	76,500
Royal Bank of Queensland Limited ...	162,059	6	3,917	29,614
Bank of North Queensland Limited ...	500,000	10	25,000	490,000
Bank of Adelaide ...	250,000	20	25,000	675,876
Western Australian Bank ...	175,000	14	12,250	219,449
Commercial Bank of Tasmania Limited ...	152,040	7	6,321	7,007
National Bank of Tasmania Limited ...	2,000,000 ⁶	(10 Preferen.) 12 & 3 bonus Ordinary	165,000 ⁷	1,418,117
Bank of New Zealand ...	8,000,000	8	640,000 ⁷	1,573,806
Comptoir National d'Escompte de Paris ...	85,000	8	3,400	80,000
Ballarat Banking Company Limited ...	...	...	...	...
Total ...	28,996,952	...	...	13,629,535

1. £171,930 preferential, £376,463 ordinary. 2. £305,760 preferential, £1,192,440 ordinary.
3. £2,117,350 preferential, £35,644 ordinary. 4. £416,760 preferential, £1,061,250 ordinary. 5. Arrears of call, £1,657. 6. £500,000 preference shares issued to the Crown under the "Bank of New Zealand Act 1903," £500,000 ordinary shares, and £1,000,000 guaranteed stock. 7. For 12 months.

4. **Liabilities and Assets of Banks.**—(i.) *Liabilities of Banks for Quarter ended 30th June, 1913.* As already stated, the banks transacting business in any State are obliged, under the existing State laws, to furnish a quarterly statement of their assets and liabilities, which contains the averages of the weekly statements prepared by the bank for that purpose, and they have, during the years 1908-13, furnished quarterly statements to the Commonwealth Statistician. As all other financial returns in this work embrace, so far as possible, a period ended 30th June, 1913, it seems advisable to give the banking figures for the quarter ended on that date, and, where they are shewn for a series of years, similarly to use the figures for the June quarter of each year. The liabilities are those to the general public, and are exclusive of the banks' liabilities to their shareholders, which are shewn in the preceding table:—

AVERAGE LIABILITIES OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1913.

State.	Notes in Circulation, not bearing interest.	Bills in Circulation, not bearing interest.	Balances Due to other Banks.	Deposits.			Total Liabilities.
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
New South Wales	142,686	431,430	861,271	26,504,388	30,777,791	57,282,179	58,717,566
Victoria	125,920	149,099	537,298	16,622,515	31,060,613	47,683,128	48,502,445
Queensland	(a)	206,104	572,249	8,928,349	12,576,239	21,504,588	22,282,941
South Australia	49,793	19,635	200,485	4,215,726	7,499,059	11,714,785	11,984,698
West Australia	33,565	58,064	261,376	3,506,787	2,843,288	6,350,055	6,703,060
Tasmania	17,011	29,659	50,676	2,163,311	3,024,963	5,188,274	5,285,620
North. Territory	...	104	8,874	64,697	32,862	97,559	106,537
Total	368,975	894,095	2,492,229	62,012,773	87,814,795	149,827,568	153,582,867

(a) In Queensland, Treasury notes were used instead of bank notes.

(ii.) *Assets of Banks for Quarter ended 30th June, 1913.* The average assets of the banks are shewn in the following table:—

AVERAGE ASSETS OF BANKS IN EACH STATE OF THE COMMONWEALTH AND THE NORTHERN TERRITORY FOR THE QUARTER ENDED 30th JUNE, 1913.

State.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Government and Municipal Securities.	Landed and House Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	Discounts Overdrafts, and all other Assets.	Australian Notes.	Total Assets.
	£	£	£	£	£	£	£	£	£
N.S.W.	11,839,976	143,724	3,407,087	1,967,550	363,753	1,111,901	41,740,849	1,854,248	62,429,094
Victoria	8,858,155	244,278	446,424	1,590,714	451,392	733,756	35,914,898	930,865	49,170,482
Q'land	3,816,975	76,583	288,449	759,957	318,088	806,543	16,748,341	943,644	23,758,580
S. Aust.	2,500,738	1,329	118,237	320,045	131,064	194,211	7,893,585	515,650	11,674,859
W. Aust.	2,284,925	651,561	184,350	218,648	64,243	166,894	8,124,242	399,795	12,094,667
Tas. ...	828,730	132	903,661	125,762	5,553	186,847	3,056,852	200,894	5,398,431
Nor. Ter.	3,688	1,272	...	1,200	89	11,660	2,279	8,613	28,801
Total	30,133,187	1,118,879	5,438,217	4,983,882	1,334,182	3,211,812	113,481,046	4,853,709	164,554,914

(iii.) *Liabilities of Banks for June Quarter, 1904 to 1913.* In the subjoined table, which shews the average liabilities of the banks for the quarters ended 30th June, 1904 to 1913, for the Commonwealth as a whole, it will be seen that the growth in total liabilities is almost entirely due to an increase in the deposits, and that deposits not bearing interest and deposits bearing interest have shared in that increase very equally:—

**AVERAGE LIABILITIES OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1904 to 1913.**

Year.	Notes in Circulation not Bearing Interest.	Bills in Circulation not Bearing Interest.	Balances due to other Banks.	Deposits.			Total Liabilities
				Not Bearing Interest.	Bearing Interest.	Total.	
	£	£	£	£	£	£	£
1904	3,133,268	521,267	290,441	35,630,255	55,917,848	91,548,103	95,493,079
1905	3,036,879	555,256	446,555	36,847,610	61,295,775	98,143,385	102,182,075
1906	3,244,256	568,670	577,094	41,036,116	65,479,150	106,515,266	110,905,286
1907	3,563,151	801,878	444,460	46,781,234	65,916,735	112,697,969	117,507,488
1908	3,536,227	707,903	796,447	46,015,448	67,678,940	113,694,388	118,734,965
1909	3,510,629	720,853	555,806	46,812,632	70,945,623	117,758,255	122,545,543
1910	3,748,482	821,768	570,115	55,233,862	74,657,274	129,891,136	135,031,491
1911	3,718,458	928,663	741,188	62,226,897	81,220,013	143,446,910	148,835,219
1912	536,984	1,002,062	872,946	65,408,841	84,397,756	149,806,597	152,218,589
1913	368,975	894,095	2,492,229	62,012,773	87,814,795	149,827,568	153,582,867

(iv.) *Assets of Banks for June Quarter, 1904 to 1913.* A similar table shewing the average assets of the banks for the June quarters of each of the years 1904 to 1913 is shewn below. Bullion, in the case of the Tasmanian banks, is included with coin in the years 1903 to 1907.

**AVERAGE ASSETS OF BANKS IN THE COMMONWEALTH FOR THE QUARTER
ENDED 30th JUNE IN THE YEARS 1904 to 1913.**

Year.	Coined Gold and Silver and other Metals.	Gold and Silver in Bullion or Bars.	Landed and other Property.	Notes and Bills of other Banks.	Balances Due from other Banks.	All other Debts Due to the Banks.(a)	Total Assets.
	£	£	£	£	£	£	£
1904	17,910,771	1,447,698	5,245,312	692,688	781,368	87,705,222	113,783,059
1905	19,988,465	1,501,890	5,212,799	705,089	809,929	85,766,259	113,984,431
1906	21,268,679	1,412,763	5,160,875	802,225	1,234,921	87,889,121	117,768,584
1907	22,420,395	1,291,033	5,028,379	840,217	1,170,276	94,990,435	125,740,735
1908	23,578,293	1,353,267	4,938,212	889,377	1,131,612	101,647,044	133,537,805
1909	24,943,910	1,353,933	4,852,471	932,354	1,153,611	98,481,421	131,717,700
1910	28,826,729	1,322,899	4,919,991	973,161	1,343,669	101,371,817	138,758,266
1911	32,330,705	1,140,065	4,937,437	1,279,714	1,698,097	118,179,425	159,565,443
1912	27,581,368	1,104,644	4,956,593	1,168,958	1,761,701	129,197,992	165,771,256
1913	30,133,187	1,118,879	4,983,882	1,334,182	3,211,812	123,772,972	164,554,914

(a) Including Government and Municipal securities, and Australian notes.

The figures do not call for much comment. As the table shews, the increase in the total amount of assets is partly due to an increase in the amount of specie held by the banks against liabilities at call, and partly to advances.

5. Percentage of Coin, Bullion, and Australian Notes to Liabilities at Call.—

(i.) *Commonwealth.* Although it is not strictly correct to assume that the division of deposits into those bearing interest and not bearing interest would in every case coincide with a division into fixed deposits and current accounts, the division, in default of a better one, must be adopted, and in the following table "liabilities at call" are therefore understood to include the note circulation of the banks and the deposits not bearing interest. From 1912 onwards, however, the former item will tend to become negligible.

PERCENTAGE OF COIN, BULLION AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1904 to 1913.

Year.				Liabilities at Call.	Coin, Bullion, and Australian Notes.	Percentage to Liabilities at Call.
				£	£	%
1904	...	...	...	38,763,523	19,358,469	49.94
1905	...	...	...	39,884,489	21,490,355	53.88
1906	...	...	...	44,280,372	22,681,442	51.22
1907	...	...	...	50,344,415	23,711,428	47.10
1908	...	...	...	49,551,675	24,931,560	50.31
1909	...	...	...	50,323,261	26,297,843	52.26
1910	...	...	...	58,982,344	30,149,628	51.12
1911	...	...	...	65,945,355	33,470,770	50.76
1912	...	...	...	65,945,825	34,120,831	51.74
1913	...	...	...	62,881,748	36,105,775	57.88

It would appear from the figures just given that the banks generally consider it advisable to hold about half the amount of liabilities at call in coin and bullion. The drop to 47.10 per cent. in 1907 was due to the very large increase in the amount of deposits during the year, and to the fact that the increase in the coin and bullion held, considerable though it was, did not keep pace therewith. The large rise in 1913 was due to a decrease in the deposits, coupled with a simultaneous advance in coin, bullion, and Australian notes.

(ii.) *Queensland Treasury Notes.* No bank-notes are issued by any of the banks in Queensland, where a Treasury note has taken the place of bank-notes since 1893. These Treasury notes are disregarded in the quarterly statements of the banks: according to Treasury returns the amount outstanding on 30th June, 1913, was £40,314, partly in circulation, and the balance held by the banks. Under the Australian Notes Act, the issue of notes by a State is now prohibited.

(iii.) *States.* The proportion of coin, bullion and Australian notes to liabilities at call varies considerably in the different States, and is generally highest in Western Australia, and lowest in Queensland and Tasmania. A table is appended shewing the percentages for each State for the quarter ended 30th June in each of the years 1904 to 1913:—

PERCENTAGE OF COIN, BULLION AND AUSTRALIAN NOTES TO LIABILITIES AT CALL, COMMONWEALTH BANKS, 1904 to 1913.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1904	48.67	52.92	39.66	51.45	58.70	46.41	...	49.94
1905	50.51	58.01	45.78	55.66	67.35	44.25	...	53.88
1906	48.49	53.55	40.43	51.25	73.98	42.39	...	51.22
1907	44.81	49.17	37.20	46.73	71.14	39.84	...	47.10
1908	47.70	54.68	41.09	45.63	76.09	40.06	...	50.31
1909	50.38	56.57	39.68	46.90	83.29	41.48	...	52.26
1910	51.33	51.66	39.78	48.27	81.09	37.77	...	51.12
1911	52.28	45.05	43.60	51.64	86.55	35.13	16.27	50.76
1912	50.79	50.42	47.53	56.98	72.82	44.63	32.95	51.74
1913	51.93	59.87	54.18	70.75	94.23	47.23	20.98	57.88

6. Deposits and Advances.—(i.) *Total Deposits.* The total amount of deposits held by the banks shews a steady advance during the period under review, although the total for 1904, when the country was slowly recovering from the effects of the drought, was slightly below that for 1902:—

TOTAL DEPOSITS IN COMMONWEALTH BANKS, 1904 to 1913.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	N. Ter.	All States.
	£	£	£	£	£	£	£	£
1904	33,058,342	31,188,971	12,626,184	6,375,267	4,726,158	3,573,181	...	91,548,103
1905	35,972,265	33,642,092	12,987,859	6,892,103	4,999,650	3,649,416	...	98,143,385
1906	39,099,630	36,764,392	13,665,110	7,513,802	5,645,701	3,826,631	...	106,515,266
1907	41,967,265	38,393,179	14,852,584	8,247,366	5,500,112	3,737,463	...	112,697,969
1908	43,616,984	37,538,722	15,328,066	8,644,346	4,894,639	3,671,641	...	113,694,388
1909	44,626,184	38,611,731	16,138,931	9,727,879	4,987,894	3,665,626	...	117,758,255
1910	50,018,885	41,800,708	17,420,034	10,782,890	6,129,668	3,729,951	...	129,891,136
1911	55,222,458	46,363,615	19,633,303	11,128,300	7,280,392	3,759,486	59,350	143,446,910
1912	58,229,571	48,453,808	20,311,907	11,600,180	6,900,758	4,236,207	74,166	149,806,597
1913	57,282,179	47,690,128	21,504,588	11,714,785	6,350,055	5,188,274	97,569	149,827,568

(ii.) *Deposits per Head of Population.* To shew the extent to which the population makes use of the banking facilities afforded to it, a table is given hereunder shewing the amount of total deposits per head of mean population for each of the years 1904 to 1913. The figures must not be taken as representative of the savings of the people, as a large proportion of the deposits is non-interest-bearing and therefore presumably used in the business of the banks' customers, together with a small part of the interest-bearing deposits.

DEPOSITS PER HEAD OF POPULATION IN COMMONWEALTH BANKS, 1904 to 1913.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Northern Territory.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1904	23 0 6	25 18 11	24 4 10	17 13 5	20 6 8	19 11 1	...	23 5 4
1905	24 10 7	27 18 6	24 12 1	18 19 0	20 7 1	19 16 4	...	24 11 8
1906	26 1 4	30 6 8	25 10 1	20 10 1	22 5 0	20 15 8	...	26 5 10
1907	27 5 8	31 7 2	27 9 1	22 5 0	21 10 8	20 6 6	...	27 7 11
1908	27 15 6	30 6 8	27 15 0	22 14 11	19 0 8	19 12 10	...	27 3 5
1909	28 0 4	30 14 0	28 8 6	24 17 5	19 0 4	19 6 1	...	27 12 8
1910	30 13 5	32 14 9	29 11 6	27 1 2	22 14 10	19 11 0	...	29 16 5
1911	33 9 1	35 1 10	32 2 2	27 3 7	25 11 0	19 7 7	17 17 0	32 1 8
1912	34 15 5	35 11 1	32 13 0	27 14 10	23 9 2	21 17 11	22 16 8	32 15 10
1913	31 14 9	34 6 10	33 1 3	27 1 8	20 6 11	26 15 0	26 17 10	31 6 1

(iii.) *Total Advances.* In the quarterly statements furnished by the banks the column headed "all other debts due to the banks," which usually average about 75 per cent. of the total assets, is made up of such miscellaneous items as bills discounted, promissory notes discounted, overdrafts on personal security, overdrafts secured by deposit of deeds or by mortgage, etc. The quarterly returns furnished to the Commonwealth Statistician in 1908 and 1909 provided for a division of the amounts contained under this heading into a number of sub-headings, but all the banks were not in a position to make the necessary division, so that under present circumstances it is impossible to separate these items, and the total amounts contained in the column must, therefore, be treated as advances. The following table shews the totals for each State during the years 1904 to 1913. It will be noted that between the consecutive years 1908-9 and 1912-13 there was a marked decrease in the advances. In each case this was roughly concurrent with a slackening in the increase of deposits, and was due partly to this slackening, and partly to international causes.

ADVANCES BY COMMONWEALTH BANKS, 1904 to 1913.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania	Northern Territory.	All States.
	£	£	£	£	£	£	£	£
1904	33,237,755	29,426,052	13,974,233	4,401,991	3,955,108	2,710,083	...	87,705,222
1905	31,965,017	28,593,201	13,590,333	4,793,936	4,172,983	2,650,789	...	85,766,359
1906	32,057,192	29,690,683	13,850,921	5,053,184	4,635,624	2,592,517	...	87,880,121
1907	34,460,963	31,894,070	15,076,455	5,545,316	5,140,911	2,872,660	...	94,990,435
1908	37,948,889	33,254,780	15,245,537	5,805,575	5,581,001	3,008,237	...	100,844,019
1909	34,853,220	31,455,141	14,409,669	5,699,546	5,384,518	2,715,648	...	94,607,742
1910	34,809,345	33,064,881	14,167,480	6,426,809	5,889,061	2,722,645	...	97,080,221
1911	39,001,933	35,732,928	15,639,657	8,018,597	7,327,529	2,796,045	2,085	108,578,774
1912	43,575,784	37,843,360	17,765,880	8,565,340	8,360,903	2,857,565	3,755	118,972,677
1913	41,740,849	35,914,598	16,748,341	7,893,585	8,124,242	3,056,852	2,279	113,451,046

(iv.) *Proportion of Advances to Deposits.* The percentage borne by advances to total deposits shews to what extent the needs of one State have to be supplied by the resources of another State, and where the percentage for the Commonwealth as a whole exceeds 100, as it did in 1901, 1902, and 1903, the banks must have supplied the deficiency from their own resources, or from deposits obtained outside the Commonwealth. The following figures shew, however, that the banking business of the Commonwealth has been practically self-contained during the period under review :—

**PERCENTAGE OF ADVANCES TO TOTAL DEPOSITS, COMMONWEALTH BANKS,
1904 TO 1913.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Ter.	All States.
	%	%	%	%	%	%	%	%
1904	100.54	94.35	110.68	69.05	83.69	75.85	...	95.80
1905	88.86	84.99	104.64	69.56	83.47	72.64	...	87.39
1906	81.99	80.78	101.36	67.25	82.11	67.75	...	82.51
1907	82.11	83.07	101.51	67.24	93.47	76.86	...	84.29
1908	87.00	88.59	99.46	67.16	114.00	81.93	...	88.70
1909	78.10	81.47	89.84	58.59	107.95	74.08	...	80.34
1910	69.59	79.08	81.33	59.60	96.07	72.99	...	74.74
1911	70.63	77.20	79.66	72.06	100.65	74.37	3.51	75.69
1912	74.83	78.10	87.47	73.84	121.16	67.46	5.06	79.42
1913	72.87	75.31	77.88	67.38	127.94	58.92	2.34	75.74

7. Clearing Houses.—The Sydney Banks' Exchange Settlement and the Melbourne Clearing House, at which two institutions settlements are effected daily between the banks doing business in New South Wales and Victoria respectively, publish figures of the weekly clearances effected. From these figures it appears that in 1913 the total clearances in Sydney amounted to £348,741,000, and in Melbourne to £297,256,000. These figures represent an increase for Sydney of £18,120,000 on those for 1912, and a decrease for Melbourne of £6,207,000. Owing to the different distribution of the banking business in the two cities these figures do not, however, afford a fair comparison of the volume of banking business transacted in Sydney and Melbourne.

§ 3. Companies.

1. General.—Returns in regard to registered companies are defective, and, with few exceptions, are not available for Tasmania. They embrace (a) Returns relating to Trustees, Executors and Agency Companies; (b) Returns relating to Registered Building and Investment Societies; and (c) Returns relating to Registered Co-operative Societies.

2. Trustees, Executors and Agency Companies.—Returns are available of seven Victorian, two New South Wales, one Queensland, one South Australian, one Western Australian, and two Tasmanian companies. The paid-up capital of these fourteen companies amounted to £470,147; reserve funds and undivided profits to £383,311; other liabilities, £84,777; total liabilities, £938,235. Among the assets are included :—Deposits with Governments, £181,437; other investments in public securities, fixed deposits, etc., £204,839; loans on mortgage, £143,688; property owned, £274,959; other assets, £163,312. The net profits for the year were £80,207, and the amount of dividends and bonuses £46,647. Returns as to the amount at credit of estates represented by assets are available for only seven companies, viz.:—Two Victorian, two New South Wales, one Queensland, one South Australian, and one Western Australian, the total shewn being £31,953,690.

Probably nearly £23,000,000 would have to be added to this amount for the remaining seven companies, so that the total amount would not be far short of £55,000,000. None of these companies receive deposits, and advances are only made under exceptional circumstances, and to a very limited extent, the total so shewn in the last balance-sheets being but £98,734.

3. Registered Building and Investment Societies.—Returns have been received of a total of 193 societies, viz., 105 in New South Wales, 32 in Victoria, 14 in Queensland, 27 in South Australia, 11 in Western Australia, and 4 in Tasmania. The balance-sheets cover various periods ended during the second half of 1912 and the first half of 1913, so that the returns may be assumed to roughly correspond to the financial year 1912-13. The liabilities of the societies are stated as follows:—

LIABILITIES OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1912-13.

State.	Paid-up Capital or Subscriptions.	Reserve Funds.	Deposits.	Bank Over-drafts and other Liabilities.	Total Liabilities.
	£	£	£	£	£
New South Wales	852,519	(a)	504,650	54,746	1,411,915
Victoria	1,275,496	261,368	829,792	363,765	2,730,421
Queensland	431,653	30,775	112,064	47,749	622,241
South Australia	390,996	6,915	6,180	12,770	416,861
Western Australia	110,026	...	14,468	14,298	138,792
Tasmania	102,356	40,778	164,778	11,801	319,713
Total	3,163,046	339,836	1,631,932	505,129	5,639,943

(a) Included in paid-up capital or subscriptions.

The assets of the companies for the same period were as follows:—

ASSETS OF REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1912-13.

State.	Advances on Mortgage.	Landed and House Property, Furniture, etc.	Cash in Hand and on Deposit and other Assets.	Total Assets.
	£	£	£	£
New South Wales	1,299,146	(a)	284,045	1,583,191
Victoria	2,084,354	623,567	58,065	2,765,986
Queensland	598,383	13,537	18,728	630,648
South Australia	407,061	4,046	21,467	432,574
Western Australia	133,850	25	4,917	138,792
Tasmania	294,522	7,990	17,201	319,713
Total	4,817,316	649,165	404,423	5,870,904

(a) Included with other assets.

Statistical information, so far as is available, is furnished in the following table:—

REGISTERED BUILDING AND INVESTMENT SOCIETIES, 1912-13.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
Number of societies	105	32	14	27	11	4	193
Number of shareholders	(a)	8,518	4,635	11,113	2,820	1,698	(c)28,784
Number of shares	(a)	(a)	764,318	25,329	8,153	10,148	(d)807,948
Number of borrowers	(a)	10,538	3,811	2,372	962	1,535	(c)19,218
Income for year from interest	103,646	150,379	38,093	18,053	(b)	16,124	326,295
Working expenses for year	72,649	71,281	6,830	7,022	2,564	3,427	163,773
Amount of deposits during year	164,469	547,344	47,142	6,270	29,775	42,112	537,112
Repayment of loans during year	96,771	565,716	83,508	89,340	44,589	66,345	946,272
Loans granted during year	195,023	591,253	70,849	144,582	45,891	70,089	1,117,657

(a) Not available. (b) Included in repayment of loans. (c) Exclusive of New South Wales.
(d) Exclusive of New South Wales and Victoria.

4. **Registered Co-operative Societies.**—Returns are available of 97 societies, of which 40 were in New South Wales, 36 in Victoria, 5 in Queensland, 7 in South Australia, and 9 in Western Australia. As in the case of Building and Investment Societies, so in the case of Co-operative Societies do the balance-sheets cover various periods ended during the financial year 1912-13. The liabilities of the 97 societies are shewn in the following table:—

LIABILITIES OF REGISTERED CO-OPERATIVE SOCIETIES, 1912-13.

State.	Paid-up Capital.	Reserve Funds.	Bank Over-drafts and Sundry Creditors.	Other Liabilities, Profit and Loss Account, &c	Total Liabilities.
	£	£	£	£	£
New South Wales ...	156,534	(a)	130,729	...	287,263
Victoria ...	131,469	19,382	126,651	48,685	326,187
Queensland ...	7,469	2,074	2,206	639	12,388
South Australia ...	130,484	7,819	9,541	25,972	173,816
Western Australia ...	8,322	1,566	55,029	32,351	97,268
Total(b) ...	434,278	30,841	324,156	107,647	896,922

(a) Included in paid-up capital. (b) Exclusive of Tasmania.

The assets of the societies are shewn hereunder:—

ASSETS OF REGISTERED CO-OPERATIVE SOCIETIES, 1912-13.

State.	Stock and Fittings.	Cash in Hand and Sundry Debtors.	Freehold and other Property and other Assets.	Total Assets.
	£	£	£	£
New South Wales ...	172,282	85,301	133,387	390,970
Victoria ...	129,722	105,685	102,692	338,099
Queensland ...	10,834	4,955	...	15,789
South Australia ...	129,901	35,542	18,050	183,493
Western Australia ...	69,336	27,726	206	97,268
Total(a) ...	512,075	259,209	254,335	1,025,619

(a) Exclusive of Tasmania.

The following table gives statistical information, so far as available:—

REGISTERED CO-OPERATIVE SOCIETIES, 1912.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	C'wlth. (a)
Number of societies on 31st December, 1912 ...	40	36	5	7	9	97
Total No. of members on 31st December, 1912 ...	26,767	20,308	14,758	10,706	983	73,522
Total income for year 1912 ...	£ 1,319,601	638,568	19,763	372,578	351,922	2,702,433
Working expenses for year ended 31st December, 1912 ...	£ 1,232,062	106,114	19,665	60,967	350,012	1,768,820

(a) Exclusive of Tasmania.

§ 4. Savings Banks.

1. **General.**—The total number of savings banks, with their branches and agencies, in the Commonwealth, approximates to that of ordinary banks, and at the middle of 1913, numbered 2133, distributed as follows:—New South Wales, 640; Victoria, 433; Queensland, 452; South Australia, 283 (exclusive of 281 school penny savings banks); Western Australia, 180 (exclusive of 274 school penny savings banks); and Tasmania, 145. These figures are exclusive of the newly-established Commonwealth Savings Bank, except in the State of Tasmania.

In the following tables the figures for Victoria, Queensland, South Australia and Western Australia refer to financial years ended 30th June, and those of New South Wales to calendar years ended 31st December next preceding. In the case of Tasmania figures for the two joint-stock savings banks are made up to the last day of February in each year. In the case of the Commonwealth Bank, figures are made up to the 30th June, 1913.

2. **Depositors.**—The total number of depositors, *i.e.*, of persons having accounts open, not of those making deposits, in each of the last ten years is shewn in the following table:—

NUMBER OF DEPOSITORS IN SAVINGS BANKS, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust. (a)	W. Aust. (a)	Tasmania.	All States.
1903-4	331,956	432,867	80,959	141,572	54,873	47,904	1,090,131
1904-5	355,824	447,382	84,165	146,366	59,764	49,438	1,142,939
1905-6	364,039	466,752	88,026	152,487	63,573	50,731	1,185,608
1906-7	392,050	491,318	92,912	161,855	66,737	53,817	1,258,689
1907-8	421,928	511,581	100,324	174,289	72,178	55,620	1,335,920
1908-9	436,029	532,425	106,627	187,482	77,748	58,145	1,398,456
1909-10	460,251	560,515	114,720	201,275	86,166	60,646	1,483,573
1910-11	498,658	595,424	127,219	216,480	99,017	63,314	1,600,112
1911-12	544,023	641,736	139,091	232,971	111,078	67,105	1,736,004
1912-13(b)	619,224	703,084	168,438	251,963	121,201	70,402	1,934,312

(a) Inclusive of depositors in penny savings banks since 1907-8. (b) Inclusive of Commonwealth Savings Bank.

The subjoined table shews the above figures in relation to the population of the States; it must, of course, be borne in mind that savings bank accounts are not restricted to the adult population, but that it is, on the contrary, a very usual practice to open accounts in the names of children. Even so, the proportion is a large one, amounting in the case of the Commonwealth to more than two-fifths, and rising in Victoria to one-half, and in South Australia to more than four-sevenths.

DEPOSITORS IN SAVINGS BANKS PER 1000 OF POPULATION, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	All States.
1903-4	233	359	156	392	244	262	278
1904-5	244	371	160	403	250	267	288
1905-6	245	386	166	416	254	272	294
1906-7	258	403	172	437	262	290	308
1907-8	270	415	184	462	284	293	321
1908-9	275	426	191	481	299	303	330
1909-10	285	439	199	508	324	314	343
1910-11	303	458	212	528	358	327	362
1911-12	325	471	224	553	378	347	380
1912-13(a)	342	506	257	581	386	362	403

(a) Inclusive of Commonwealth Savings Bank.

3. **Deposits.**—The total amount of deposits in the savings banks of the six States reaches the large sum of seventy-five million pounds, and would no doubt be even larger if the banks did not restrict interest-bearing deposits to certain limits. It must be remembered that though not granting him facilities to draw cheques, the Australian savings banks practically afford the small tradesman all the advantages of a current account, in addition to which they also allow him interest on his minimum monthly balance, instead of charging him a small fee for keeping his account, as the ordinary banks do. The rates of interest allowed, and the limits of interest-bearing deposits, are as follows:—New South Wales, Government Savings Bank, 3 per cent. up to £500; Savings Bank of New South Wales, 4 per cent. up to £200; Victoria, 3½ per cent. on first £100, and 3 per cent. on excess from £101 to £350; Queensland, 3 per cent. up to £500; South Australia, 2½ per cent. on accounts closed during the year, and 3¼ per cent. up to £250 on accounts remaining open; Western Australia, 3 per cent. up to £1000; Hobart Trustees' Savings Bank, 4 per cent. up to £50, 3½ per cent. on the excess from £50 to £150; Launceston Trustees' Savings Bank, 3¾ per cent. up to £150, and Commonwealth Savings Bank, 3 per cent. up to £300. The savings banks of five of the States—New South Wales (Government Savings Bank), Victoria, Queensland, South Australia, and Western Australia—have, for the further benefit of depositors, entered into a reciprocity arrangement, under which money deposited in one State may be drawn out in another State, and even by telegraph.

The table below shews the total amounts at credit of depositors in each of the last ten years:—

DEPOSITS IN SAVINGS BANKS, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£	£	£	£	£	£	£
1903-4 ...	12,344,623	10,582,808	3,741,967	4,217,836	2,079,763	1,249,760	34,216,757
1904-5 ...	12,982,648	10,896,741	3,875,197	4,398,041	2,207,296	1,263,542	35,623,465
1905-6 ...	13,963,635	11,764,179	4,142,791	4,766,907	2,316,161	1,332,546	38,286,219
1906-7 ...	15,320,532	12,792,590	4,543,104	5,320,872	2,633,135	1,488,036	42,098,289
1907-8 ...	17,530,157	13,428,676	4,921,881	5,820,344	2,885,463	1,560,951	46,147,472
1908-9 ...	18,805,082	14,101,710	5,158,219	6,347,271	3,059,738	1,605,919	49,077,939
1909-10 ...	20,150,574	15,417,888	5,622,986	6,791,320	3,481,764	1,652,966	53,117,498
1910-11 ...	22,453,924	17,274,423	6,376,969	7,435,772	4,092,504	1,760,080	59,393,682
1911-12 ...	25,361,338	19,662,465	7,342,811	8,248,396	4,408,320	1,933,448	66,956,778
1912-13(a) ...	28,862,592	22,232,196	8,668,284	8,766,182	4,682,738	2,036,211	75,248,203

(a) Inclusive of Commonwealth Savings Bank.

A comparison between the tables shewing the number of depositors and the amount of deposits reveals the fact that the average amounts to the credit of each depositor are considerably larger in some States than in others; in other words, that in one State a comparatively larger proportion of the population makes use of the savings banks, and that the natural result is a smaller amount to the credit of the individual depositor. Within the same State there is little variation in the figures from year to year.

AVERAGE AMOUNT PER DEPOSITOR IN SAVINGS BANKS, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4 ...	37 3 9	24 9 0	46 4 5	29 15 10	37 18 0	26 1 9	31 7 9
1904-5 ...	36 9 9	24 7 2	46 0 10	30 1 0	36 18 8	25 11 2	31 3 4
1905-6 ...	38 7 2	25 4 1	47 1 3	31 5 3	36 8 8	26 5 4	32 5 10
1906-7 ...	39 1 7	26 0 9	48 17 11	32 17 6	39 9 1	27 13 0	33 8 11
1907-8 ...	41 10 11	26 5 0	49 1 2	33 7 11	39 19 6	28 1 4	34 10 10
1908-9 ...	43 11 2	26 9 9	48 7 6	33 17 1	39 7 1	27 12 5	35 4 1
1909-10 ...	43 15 8	27 10 1	49 0 4	33 14 10	40 8 2	27 5 1	35 16 1
1910-11 ...	45 0 7	29 0 8	50 2 6	34 7 0	41 6 7	27 16 0	37 2 4
1911-12 ...	46 12 4	30 12 9	52 15 10	35 8 1	39 13 9	28 16 3	38 11 4
1912-13(a) ...	46 12 2	31 12 5	51 9 3	34 15 10	38 12 9	28 18 4	38 18 0

(a) Inclusive of Commonwealth Savings Bank.

The average amount deposited per head of population shows a satisfactory increase during the period under review. In 1903-4 it ranged from £11 13s. 6d. in South Australia to £6 16s. 8d. in Tasmania, while in 1912-13 the amount in South Australia had risen to £20 4s. 3d., and in Tasmania to £10 9s. 4d. The following table gives the figures for each year:—

SAVINGS BANKS DEPOSITS PER HEAD OF POPULATION, 1903-4 to 1912-13.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1903-4 ...	8 13 3	8 15 8	7 4 7	11 13 6	9 5 1	6 16 8	8 14 9
1904-5 ...	8 18 5	9 0 9	7 7 8	12 1 11	9 4 5	6 16 6	8 19 3
1905-6 ...	9 7 8	9 14 5	7 15 11	13 0 0	9 5 2	7 3 0	9 9 10
1906-7 ...	10 1 4	10 9 9	8 8 7	14 7 3	10 6 5	8 0 6	10 5 9
1907-8 ...	11 4 6	10 17 10	9 0 4	15 8 5	11 6 9	8 4 8	11 1 9
1908-9 ...	11 17 5	11 5 6	9 5 2	16 6 0	11 15 8	8 7 6	11 11 11
1909-10 ...	12 9 8	12 1 6	9 14 7	17 2 8	13 2 1	8 11 2	12 5 8
1910-11 ...	13 13 2	13 5 6	10 12 11	18 2 7	14 15 8	9 1 9	13 8 5
1911-12 ...	14 11 7	14 10 5	11 11 8	19 8 11	14 11 7	10 3 6	14 8 4
1912-13 ...	15 19 0	15 19 10	13 4 2	20 4 3	14 17 8	10 9 4	15 13 4

4. **Annual Business.**—The annual volume of business transacted by the Australian savings banks is very large when compared with the total amount of deposits. This is mainly due to the fact already pointed out of many accounts being used as convenient current accounts. Thus, during the last year of the period under review, the total amount deposited and withdrawn (exclusive of interest added) amounted to about 180 per cent. of the total amount of deposits at the end of the previous year, while the amount at credit of depositors (inclusive of interest added) increased by less than 13 per cent. during the same year. The following table shows the business transacted during the year 1912-13:—

SAVINGS BANKS TRANSACTIONS DURING THE YEAR 1912-13.

State.	Total Deposits at End of Year 1911-12	Amounts Deposited during Year 1912-13.	Interest Added during Year 1912-13.	Total	Amounts Withdrawn during Year 1912-13.	Total Deposits at End of Year 1912-13.
	£	£	£	£	£	£
N.S. Wales ...	25,361,338	26,674,610	844,426	52,880,374	24,017,782	28,862,592
Victoria ...	19,662,465	19,761,099	631,273	40,054,837	17,822,641	22,232,196
Queensland ...	7,342,811	5,616,257	222,575	13,181,643	4,513,359	8,668,284
South Australia ...	8,248,396	5,590,371	264,738	14,103,505	5,337,323	8,766,182
West. Australia ...	4,408,320	3,881,360	126,347	8,416,027	3,733,289	4,682,738
Tasmania ...	1,933,448	902,795	61,277	2,897,520	861,309	2,036,211
Total ...	66,956,778	62,426,492	2,150,636	131,533,906	56,285,703	75,248,203

§ 5. Commonwealth Savings Bank.

A most important recent event has been the opening of the Savings Bank department of the Commonwealth Bank. This started operations in Victoria on 15th July, 1912, in Queensland on 16th September, 1912, in the Northern Territory on 21st October, 1912, and in the States of New South Wales, South Australia, and Western Australia on 13th January, 1913. Business is being carried out on the usual Savings Bank lines,

interest at the rate of 3 per cent. per annum being allowed on deposits up to £300. Extensive use is being made of the country post-offices as local agencies, the several States having received notice that their Savings Banks would have to be removed from the post-offices by the end of 1912. Victoria and Queensland withdrew at a very early stage.

At the conference of State Premiers, held at Melbourne on 19th January, 1912, and following days, the Commonwealth Prime Minister submitted certain proposals as the basis upon which the States might become partners in the Commonwealth Bank. One of the proposals was that the Commonwealth should take over the Savings Banks of each State, whether Government or trustee. After this had happened the State Government was to have first call on any loan which the Commonwealth Bank should repay to the State Bank in redemption of loans existing when it was taken over; and also first call on three-fourths of the amount of deposits in the State available for investment. The Premiers, feeling unwilling to agree to this, submitted a counter proposal [the Victorian Treasurer dissenting], that the Commonwealth Bank should refrain from embarking on Savings Bank business, and that the States, in consideration thereof, should lend to the Bank an amount equal to one-fourth of the excess of deposits over withdrawals. This arrangement was to come into force on 1st June, 1913, and last for five years. The Prime Minister, in reply, intimated that his original proposals were still open for acceptance. On 23rd January the Premiers' Conference passed the following resolution [the representatives from Victoria and Queensland dissenting]: "that this conference expresses its readiness to accept the proposals submitted by the Prime Minister, subject to a satisfactory arrangement being arrived at for giving the States an equitable share in the management of the Commonwealth Bank." The matter then remained for some months in abeyance.

Almost from the time of the opening of the Savings Banks department the Governor of the Bank made proposals to the various State Governments which might form a basis for the transfer of the various State Savings Banks to the Commonwealth. The Government of Tasmania ultimately accepted the offer, and the State Savings Bank of Tasmania was formally transferred to the Commonwealth as from the 1st January, 1913, and opened for business under the new régime on 3rd January. The remaining States' Governments have announced their intention of retaining their Savings Banks as separate institutions, and their example has been followed by the Savings Bank of New South Wales, and the two trustee Savings Banks of Tasmania. It will be of interest to give a summary of the agreement between the Commonwealth Bank and the State Savings Bank of Tasmania. The following is condensed from a statement by the Governor of the Commonwealth Bank:—

"The Commonwealth Bank is to take over all the liabilities to depositors, etc., amounting to £788,031, leaving the profit and loss balance, amounting to £5659, in the hands of the State. The assets, amounting to £793,690, are dealt with as follows: the securities to be retained by the State Government, and debentures to be issued to the Commonwealth Bank, Savings Bank Department, in lieu of same. Three per cent. stock totalling £19,000, and 3½ per cent. stock totalling £420,961, to be exchanged for 3½ per cent. debentures at 95, and 3¾ per cent. stock amounting to £204,000, and 4 per cent. stock amounting to £146,700 to be exchanged for 4 per cent. debentures. The total debentures, amounting to £784,133, will mature in 20 yearly instalments of £39,207 per annum, the first payment to be made on 30th June, 1932. The Government will provide a sinking fund of 1 per cent., to be a charge on the consolidated revenue of the State, and to be deposited in the Commonwealth Bank in reduction of debentures in even thousands, in the proportion of 3½ per cent. and 4 per cent. debentures issued. The remaining items on the balance sheet, amounting to £31,229, will be handed over to the Commonwealth Bank as cash.

"The State is to have first call for State requirements on 75 per cent. of the increased deposits at current rates, and should the State at any time not require the amount, the Governor of the Commonwealth Bank will be at liberty to invest the same, either in the business of the Bank, or in the Commonwealth or in municipal securities. The whole of the staff at present exclusively engaged in savings bank business will be retained."

The following table shews for each State the number of depositors, and the amount at credit on 30th June, 1913, of the Commonwealth Savings Bank :—

COMMONWEALTH SAVINGS BANK AS AT 30th JUNE, 1913.

				Number of Depositors.	Amount at Credit.
					£
New South Wales	...	...	...	15,351	490,586
Victoria	...	...	...	17,602	666,275
Queensland	...	...	...	13,481	455,167
South Australia	...	...	...	3,544	129,931
Western Australia	...	...	...	4,114	112,359
Tasmania	...	...	...	29,107	820,442
Northern Territory	...	...	...	228	13,151
Papua	...	...	...	46	2,238
London	...	...	...	85	3,822
Total	...	...	...	83,558	2,693,971

§ 6. Life Assurance.

1. **General.**—Under section 51 of the Commonwealth Constitution Act, the Commonwealth Parliament is empowered to legislate in regard to "insurance, other than State insurance; also State insurance extending beyond the limits of the State concerned." With the exception of Act No. 12 of 1905, "an Act relating to assurance on the lives of children by life assurance companies or societies," no legislation relating to life insurance has been passed by the Commonwealth Parliament, and life insurance companies carry on their business under State laws where such laws are in existence, or otherwise under the provisions of various companies or special Acts. A Royal Commission consisting of the Honourable J. H. Hood, one of the judges of the Supreme Court of Victoria, and G. H. Knibbs, Esquire, Commonwealth Statistician, was, however, appointed in 1908, "to inquire into and report upon the law relating to and the methods of operating, Fire, Life, Industrial, and other Insurance in Australia." The Commission was originally required to report the result of its inquiry before the 30th June, 1909. A progress report was issued before that date, and the time for the final report extended to the 30th June, 1910. The report relating to Life Assurance was published on 15th March, 1910, and that relating to Fire Insurance on 15th October, 1910. On the conclusions contained in these reports future Commonwealth legislation will probably be based. In fact, a bill embodying some of the conclusions was introduced into the Federal Parliament on December 20th, 1912, but, owing to lack of time, did not reach its second reading. An additional report on Social Insurance was prepared by the Commonwealth Statistician and issued on 9th September, 1910.

Returns for the year 1912 have been directly collected from life assurance societies by the Commonwealth Statistician, with results which are in the main satisfactory. Figures for 1912 refer to business in the Commonwealth only, and do not include New Zealand business.

2. Companies Transacting Business in the Commonwealth.—The total number of companies at present established in the Commonwealth is sixteen, of which the following six have their head offices in New South Wales:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the City Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the People's Prudential Assurance Company Limited, and the Life Insurance Company. The Standard Life Association Limited is now omitted, since a controlling interest in it has been purchased by the Colonial Mutual Life Assurance Society, and almost all its policy-holders have transferred themselves to the latter corporation. The Mutual Life and Citizens' Assurance Company Limited was formed in 1908 by the amalgamation of the Mutual Life Association of Australasia and the Citizens' Life Assurance Company Limited. During 1910 it increased in size by amalgamating with the Australian Widows' Fund Life Assurance Society Limited, which is therefore no longer included in the list of independent corporations. Five companies have their head offices in Victoria, viz.—The Australian Alliance Assurance Company, the National Mutual Life Association of Australasia Limited, the Victoria Life and General Insurance Company, the Colonial Mutual Life Assurance Society Limited, and the Australasian Temperance and General Mutual Life Assurance Society Limited. The head office of the Provident Life Assurance Company is in New Zealand, and that of the Liverpool and London and Globe Insurance Company in England. The remaining three societies belong to the United States, viz.—The Equitable Life Insurance Society of the United States, the Mutual Life Insurance Company of New York, and the New York Life Insurance Company.

Most of the Australian companies are purely mutual; the Victoria Life and General (which takes no new life business), the Mutual Life and Citizens', the Metropolitan, the Prudential, and the Life Insurance Company, are the only companies which are partly proprietary, the shareholders' capital amounting to £40,000, £74,751, £11,740, £9978 and £44,000 respectively. Of foreign companies transacting business in the Commonwealth, the Liverpool and London and Globe, the Provident, and the Equitable are partly proprietary, the shareholders' capital amounting to £265,525, £15,000 and £20,550 respectively.

3. Ordinary and Industrial Business.—Of the societies enumerated in the preceding paragraph the following six in 1912 transacted both ordinary and industrial business:—The Australian Mutual Provident Society, the Mutual Life and Citizens' Assurance Company Limited, the Australasian Temperance and General Mutual Life Assurance Society Limited, the Australian Metropolitan Life Assurance Company Limited, the Colonial Mutual Life Assurance Society, and the Life Insurance Company.

The People's Prudential Assurance Company Limited and the Provident Life Assurance Company formerly restricted their operations to industrial business, but have now established an ordinary department.

The remaining eight societies transacted ordinary life assurance business only, with the exception of those companies which have fire and accident branches, etc.

It has been attempted in this section to keep returns relating to ordinary and to industrial business apart, so far as it is possible to do so, and figures relating to companies whose head offices are in New Zealand or in Europe or America refer to the Australian business only of those companies.

4. **Ordinary Business: Australian Business in Force, 1912.**—The subjoined table shews the ordinary life business in force at the latest dates available in the fifteen societies conducting operations in the Commonwealth:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1912.

Society.	Policies in force, exclusive of Annuities.	Amount Assured, exclusive of Bonus Addition, etc.	Annual Premium Income, exclusive of Annuities.
	No.	£	£
Australian Mutual Provident Society ...	224,921	61,637,313	1,966,006
Mutual Life and Citizens' Assurance Company Limited ...	95,977	17,192,490	598,386
City Mutual Life Assurance Society ...	20,539	2,909,345	111,624
Australian Metropolitan Life Assurance Company ...	2,391	310,894	13,295
Australian Alliance Assurance Company ...	419	143,105	3,461
National Mutual Life Association of Australasia ...	72,080	15,892,287	563,204
Victoria Life and General Insurance Company ...	103	69,542	1,366
Colonial Mutual Life Assurance Society ...	34,299	6,581,808	209,708
People's Prudential ...	3,133	173,540	(a) 20,912
Australasian Temperance & General Mutual Life Assurance Society ...	37,261	3,847,593	144,582
Liverpool and London and Globe Insurance Company (Life Branch) ...	314	135,663	3,802
Provident Life ...	165	19,978	708
Life Insurance Company ...	300	60,501	10,388
Equitable Life Assurance Society of United States ...	5,804	1,980,066	79,263
Mutual Life Insurance Company of New York ...	3,910	1,506,137	49,536
New York Life Insurance Company ...	5,528	2,122,941	76,732

(a) Including industrial.

5. **Industrial Business: Australian Business in Force, 1912.**—Similar information in regard to the industrial business of the seven societies transacting that kind of business is given in the following table:—

INDUSTRIAL ASSURANCE.—AUSTRALIAN BUSINESS IN FORCE, 1912.

Society.	Policies in Force.	Amount Assured.	Annual Premium Income.
	No.	£	£
Australian Mutual Provident Society ...	72,393	2,426,816	139,408
Mutual Life and Citizens' Assurance Company ...	223,584	4,126,364	211,388
Australian Metropolitan Life Assurance Company ...	20,516	467,455	26,356
Colonial Mutual Life Assurance Society ...	48,836	1,216,174	64,415
People's Prudential Assurance Company ...	5,285	111,781	(a)
Aust. Temperance and General Mutual Life Ass. Society	135,643	2,747,509	161,976
Provident Life Assurance Company ...	5,155	129,919	6,255
Life Insurance Company ...	2,735	68,064	(a)

(a) Included in ordinary.

6. **Receipts and Expenditure of Insurance Societies, 1912.**—(i.) *Ordinary Business.* The following returns refer to the Australian business of all societies doing business in the Commonwealth. The People's Prudential Assurance Company, whose accounts do not distinguish between revenue and expenditure on account of ordinary and industrial business, has been included among the companies doing industrial business.

ORDINARY LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1912.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds).
	£	£	£
Australian Mutual Provident Society ...	3,114,922	2,012,240	1,102,682
Mutual Life and Citizens' Assurance Company ...	864,835	569,797	295,038
City Mutual Life Assurance Society ...	166,591	99,399	67,492
Australian Metropolitan Life Assurance Company ...	14,961	8,052	6,909
Australian Alliance Assurance Company ...	8,191	21,275	(a) 13,084
National Mutual Life Association of Australasia ...	845,288	476,264	369,024
Victoria Life and General Insurance Company ...	7,892	34,355	(a) 26,463
Colonial Mutual Life Assurance Society ...	312,989	256,180	56,809
Aust. Temperance & General Mutual Life Ass. Socy.	178,923	87,438	91,485
Liverpool and London and Globe (Life Branch) ...	3,802	23,495	(a) 19,693
Provident Life ...	709	198	511
Life Insurance Company ...	54,989	22,633	32,356
Equitable Life Assurance Society ...	104,246	126,317	(a) 22,071
Mutual Life Insurance Company of New York ...	64,803	85,274	(a) 20,471
New York Life Insurance Company ...	90,217	73,287	16,930

(a) Decrease.

(ii.) *Industrial Business.* A similar return for those societies which transact industrial business is given below. The figures for the Prudential, as stated above, are included therein.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN RECEIPTS AND EXPENDITURE, 1912.

Society.	Receipts.	Expenditure.	Excess Receipts (Addition to Funds)
	£	£	£
Australasian Mutual Provident Society ...	151,146	64,808	86,338
Mutual Life and Citizens' Assurance Company ...	255,161	162,586	92,575
Australasian Metropolitan Life Assurance Company	27,065	22,509	4,556
Colonial Mutual ...	64,824	55,446	9,378
People's Prudential Assurance Company ...	22,389	17,777	4,612
Aust. Temperance & General Mutual Life Ass. Soc.	180,288	122,770	57,518
Provident Life Assurance Company ...	6,432	7,012	(a) 580

(a) Decrease.

7. *Liabilities and Assets of Insurance Societies, 1912.*—The liabilities of the Australasian societies consist mainly of their assurance funds; as already mentioned, only six of the societies are partly proprietary, viz., the Mutual Life and Citizens', with a paid-up capital of £74,751; the Metropolitan, with a paid-up capital of £11,740; the Prudential, with a paid-up capital of £99,78; the Victoria Life and General, with a paid-up capital of £40,000; the Provident, with a paid-up capital of £15,000; and the Life Insurance Company, with £44,000. With the exception of the Victoria Life and General and the Life Insurance Company, this paid-up capital belongs in every case to the industrial branch of the respective societies. The capital of the Provident (£15,000) is held in New Zealand, that of the Liverpool and London and Globe (£265,525) in England, and that of the Equitable Life (£20,550) in the United States. None of these three amounts appears, therefore, in the two subjoined tables, where the capital of the Australian societies is included with the assurance funds. The assets consist mainly of loans on mortgage and policies, Government, municipal, and similar securities, shares, freehold property, etc. As in some cases the Australian liabilities exceed the Australian assets, it

may be pointed out that this table should be taken in connection with the table on page 758, which sets out the total liabilities and assets. Loans on personal security are granted by only very few of the Australian societies.

(i.) *Ordinary Business.* The following table shows the liabilities and assets of the societies transacting ordinary life business:—

ORDINARY LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1912.

Society.	Liabilities.			Assets (c)		
	Total Funds including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Australian Mutual Provident Society(a) ...	24,761,240	202,115	25,053,355	12,900,366	9,096,284	21,996,650
Mutual Life and Citizens' Assurance Co. ...	(b)	(b)	(b)	2,980,757	3,024,957	6,005,714
City Mutual Life Assurance Society ...	586,727	19,746	606,473	348,685	257,768	606,473
Australian Metropolitan Life Assurance Co. ...	42,499	8,025	50,524	12,282	38,242	50,524
Australasian Alliance Assurance Company ...	131,160	2,153	133,313	81,043	52,270	133,313
National Mut. Life Assoc. of Australasia ...	5,864,915	92,805	5,947,720	4,202,621	1,745,099	5,947,720
Victoria Life and General Insurance Co. ...	160,255	13,330	173,585	25,278	148,031	173,309
Colonial Mutual Life Assurance Society ...	2,569,797	22,098	2,591,895	1,244,815	1,347,080	2,591,895
Aust. Temp. & Gen. Mut. Life Assur. Soc.(a)	1,224,384	95,905	1,320,289	562,760	757,529	1,320,289
Liverpool & London & Globe (Life Branch)	(b)	(b)	(b)	(b)	(b)	(b)
Provident Life ...	1,156	5	1,161	...	351	351
Commonwealth Life Insurance Co. ...	32,356	441	32,797	3,365	29,432	32,797
Equitable Life Assurance Society ...	251,980	(b)	251,980	149,889	407,856	557,745
Mutual Life Insurance Society of New York	(b)	(b)	(b)	105,611	157,810	263,421
New York Life Insurance Society ...	773,000	5,000	778,000	104,447	25,048	130,395

(a) Including industrial business. As the business of these two societies is mainly ordinary life business they have been included in this table. (b) Not available. (c) Several life offices have a considerable portion of their assets invested outside the Commonwealth (see table on page 758)

(ii.) *Industrial Business.* As stated in the footnote to the preceding table, the Australian Mutual Provident Society and the Australasian Temperance and General Mutual Life Assurance Society, which transact a certain amount of industrial business, but whose business is mainly ordinary life business, have been included with those societies doing only ordinary life business. On the other hand, the People's Prudential Assurance Company, in whose case industrial business greatly predominates over ordinary life business, has been included in the following table. Incomplete as the table is, it shews that the funds appropriated to industrial business are very insignificant in comparison with those pertaining to ordinary life business. Taking the table in conjunction with the statements of revenue and expenditure, the question may well be asked whether in the case of some of the societies industrial business is worth catering for at all.

INDUSTRIAL LIFE ASSURANCE.—AUSTRALIAN LIABILITIES AND ASSETS, 1912.

Society.	Liabilities.			Assets.		
	Total Funds, including Paid-up Capital.	Other Liabilities.	Total.	Loans on Mortgages and Policies.	Securities, Freehold Property, etc.	Total.
	£	£	£	£	£	£
Mutual Life & Citizens' Assurance Company	(b)	(b)	(b)	725,951	316,654	1,042,605
Australian Metropolitan Life Assurance Co.	41,715	680	42,395	964	41,431	42,395
Colonial Mutual Life Assurance Society ...	68,865	34,881	103,746	1,661	100,943	102,604
People's Prudential Assurance Company (a)	37,615	142	37,757	17,256	20,501	37,757
Provident Life Assurance Company ...	2,675	25	2,700	...	5,421	5,421

(a) Including ordinary business. (b) Particulars not available.

(iii.) *Total Liabilities and Assets.* It has been thought advisable to confine the figures relating to life assurance to business in the Commonwealth. Several of the companies whose head offices are in Australia transact, however, a large amount of business elsewhere, viz., in New Zealand, in South Africa, and in the United Kingdom, while in the case of the foreign companies, the Australian business is insignificant compared with that done elsewhere. Particulars as to this foreign business of both Australian and foreign companies will be found in "Finance Bulletin, No. 7," and a short table only is inserted here, shewing the total liabilities and assets (which balance in every case) of the various companies, so that the deficiencies in the Australian assets shewn in the previous tables for those companies doing business elsewhere may not be misunderstood:—

TOTAL LIABILITIES AND ASSETS OF INSURANCE COMPANIES, 1912.

Society.	Liabilities and Assets.	Society.	Liabilities and Assets.
ORDINARY BUSINESS.	£		£
(a) Australian Mutual Provident Soc.	30,395,931	Provident Life ...	20,054
Mutual Life and Citizens' Assur. Co.	7,189,393	Commonwealth Life Insurance Co.	32,797
City Mutual Life Assurance Society...	606,473	Equitable Life Assurance Society ...	105,770,073
Aust. Metropolitan Life Assur. Co. ...	50,524	Mutual Life Ins. Society of New York	123,023,623
Australian Alliance Assurance Co. ...	133,313	New York Life Insurance Society ...	147,883,638
National Mutual Life Association ...	7,477,089	INDUSTRIAL BUSINESS.	
Victoria Life and General Insur. Co.	173,585	Mutual Life and Citizens' Assur. Co.	1,074,641
Colonial Mutual Life Assurance Soc.	3,501,906	Aust. Metropolitan Life Assur. Co. ...	42,395
(a) Aust. Temp. & Gen. Mut. Life A. Soc.	1,460,365	Colonial Mutual Life Assurance Soc.	115,567
Liverpool & London & Globe (Life) ...	12,566,986	(b) People's Prudential Assurance Co.	37,757
		Provident Life Assurance Company	59,920

(a) Including industrial business.

(b) Including ordinary business.

§ 7. Fire Insurance.

1. **General.**—Returns as to fire insurance are very defective, and only for Sydney and Melbourne and the country districts of Victoria have some figures been given which are worth reproducing. The Royal Commission mentioned above under "Life Assurance" has reported upon fire insurance matters, and Commonwealth legislation may, therefore, be expected at an early date. Legislation concerning fire insurance was in fact contained in the bill to which reference has already been made. [§ 5, paragraph 1.]

2. **Sydney.**—Under the Fire Brigades Act 1902 the cost of the Metropolitan Fire Brigade is defrayed by equal payments on the part of the Colonial Treasurer, the municipal councils within the area under the jurisdiction of the Fire Brigades Board, and the insurance companies represented in Sydney. The companies divide their share proportionately to the amount held at risk. Under this arrangement the amount payable by the companies for the year 1909 was £19,100, divided amongst sixty-five companies, of which not more than six had their head office in Sydney. The amounts thus held at risk at the close of the last four years for which returns are available were, in 1905, £78,108,749; in 1906, £81,364,129; in 1907, £86,563,304; and in 1908, £89,071,992. A new Act, which came into force on the 1st January, 1910, was passed in 1909. This Act substituted a Board of Fire Commissioners for New South Wales for the original Metropolitan Fire Brigades Board, and divides the whole State into eight fire districts for the greater facilitation of working.

3. **Melbourne.**—In Melbourne the Metropolitan Fire Brigades Board assesses the amount payable by the insurance companies on the amount of premiums returned. These premiums for the last four years averaged about £370,000 per annum, while

the contributions paid by the companies averaged about £19,000, or about £5 for every £100 of premiums. It may be said, therefore, that the companies have to devote about 5 per cent. of their premium income from metropolitan insurances to the maintenance of the fire brigade.

The annual value of ratable property is nearly £5,920,000, and the amounts contributed by the municipalities—as in the case of the insurance companies, one-third of the amount required by the Fire Brigades Board, the remaining one-third being contributed by the State Treasurer—are equal to about $\frac{1}{3}$ d. per £1 of ratable value. In addition to this contribution, insurance companies doing business in Victoria have to take out an annual license at a cost of $1\frac{1}{2}$ per cent. of the gross premium income, which is probably equal to about $1\frac{2}{3}$ per cent. on net income.

4. Country Districts of Victoria.—The country districts are divided into nine areas for fire insurance purposes, and the contributions to be paid vary in these areas according to the actual requirements of the Country Fire Brigades Board. The annual values of ratable property for the last four years were slightly over £1,500,000. The premium income of the insurance companies from country business in protected areas during the year 1912 was about £182,000, and the contributions of the companies £4700, equal to about $2\frac{1}{2}$ per cent. of the premium income.

5. Brisbane.—A similar arrangement holds good in Brisbane, under which the cost of the Fire Brigade Board, amounting to about £6000 per annum, is paid in equal shares by the Government, the Brisbane City Council, and the insurance companies.

6. Adelaide.—The Fire Brigades Board of South Australia is incorporated under "The Fire Brigades Act 1904"; "The Fire Brigades Act Amendment Act 1905"; and "The Fire Brigades Act Further Amendment Act 1910." The cost is distributed as follows:—Three-ninths to the Government; four-ninths to the insurance companies; and two-ninths to the municipalities and districts which come under the operations of the board. The insurance companies are assessed in proportion to that portion of their premium incomes derived from the insurance of property (re-insurance within the State excepted) situated within the limits of the municipalities and districts coming under the operations of the board. The respective contributions for 1912 were as follows:—The Government, £7104; the companies, £9472; the municipalities, £4736.

7. Perth.—A District Fire Brigades Bill was reported on by a committee of the Legislative Assembly during 1909, and it was recommended that all brigades should in future be controlled by one board, and that the expense should be met by contributions at the following rate:—By Government, two-eighths; by the municipalities, three-eighths; and by the insurance companies, three-eighths. These provisions were incorporated in an Act, "The District Fire Brigades Act 1909," which was assented to on 21st December, 1909, and came into force on the 1st day of January, 1910. This Act, however, does not apply to Perth or the other districts in which the Fire Brigades Act 1898 is still operative. According to the provisions of the latter Act the expenditure is allocated as follows:—One-ninth to the Government; four-ninths to the insurance companies; and four-ninths to the municipalities. It is provided that the Governor may, at any time, on the petition of the council of any municipality, declare by proclamation that the provisions of the Act of 1898 shall cease to be in force in that municipal district.

8. Australian Fire Insurance Business.—Returns are available shewing the revenue and expenditure, assets and liabilities, and investments of eighteen insurance companies having their head offices either in the Commonwealth or in New Zealand. These companies are:—(a) with head office in Sydney—the Australian Mutual Fire Insurance Company, the City Mutual Fire Insurance Company, the Mercantile Mutual Fire Insurance Company, the Queensland Insurance Company Limited, the United Insurance

Company, and the Insurance Office of Australia Limited; (b) with head office in Melbourne—the Australian Alliance Assurance Company, the Colonial Mutual Fire Insurance Company, the Commonwealth Insurance Company Limited, the Victoria Insurance Company, and the Victoria General Insurance and Guarantee Company Limited; (c) with head office in Hobart—the Derwent and Tamar Fire and Marine Assurance Company Limited; (d) with head office in Launceston—the Mutual Fire Insurance Company of Tasmania; (e) with head office in Auckland—the New Zealand Insurance Company, and the South British Fire and Marine Insurance Company of New Zealand; (f) with head office in Dunedin—the National Fire and Marine Insurance Company of New Zealand, and the Standard Fire and Marine Insurance Company of New Zealand; (g) with head office in Wellington—the New Zealand State Fire Insurance office; and (h) with head office in Christchurch—the Farmers' Co-operative Insurance Association of New Zealand. As their names imply, the majority of these companies transact marine insurance, and in some cases, guarantee and other business, in addition to the fire insurance business, and the returns relating to the latter cannot be separated from the former.

The accounts cover two periods of one year, the second year ending at various dates from 30th June, 1912, to 31st March, 1913. The figures for the first year are put in brackets.

The premiums, less reinsurances and returns, amounted to £2,282,506 (£2,088,120); losses were £1,184,977 (£1,029,801). Expenses and commission came to £774,752 (£725,806), and there was, therefore, a profit on trade operations of £322,777 (£332,513). As, however, interest, rent, fees, etc., amounted to £183,746 (£176,172), the total profit was £506,523 (£508,685). Dividends and bonuses came to £254,071 (£241,777). The ratio to premium income of losses was, therefore, 51.92 per cent. (49.32 per cent.), and of expenses and commissions, 33.94 per cent. (34.76 per cent.). The resulting ratio of trade surplus to premium income was 14.14 per cent. (15.92 per cent.).

The paid-up capital of the sixteen companies was £1,816,137 (£1,575,036); reserve and reinsurance funds, £2,396,917 (£2,375,255); undivided profits, £188,554 (£201,718). The total paid-up capital and reserves were, therefore, £4,401,608 (£4,152,009). In addition to these liabilities there were others, viz.:—Unsettled losses, £223,542 (£225,402); sundry creditors, £221,706 (£230,141); dividend to pay, £165,578 (£135,920); and, in the case of one company, a life assurance fund, £128,507 (£141,591): thus bringing the total liabilities to shareholders and to the general public up to £5,140,941 (£4,885,063).

The corresponding amount of assets is made up of investments, £4,531,063 (£4,324,017), viz.:—Loans on mortgage, £1,262,617 (£1,272,841); Government securities, debentures, shares, etc., £1,196,887 (£1,140,732); landed and other property, including furniture, £941,000 (£891,968); fixed deposits, £1,024,510 (£916,178); in the case of one company doing a mixed business—loans on its own life policies, etc., £9274 (£11,654); other investments, £96,775 (£90,644). The balance of assets consisted of cash in bank, on hand, and bills receivable, £230,950 (£217,876); and sundry debtors, etc., £378,928 (£343,170).

The financial position of the companies is undoubtedly a strong one, owing to the steady accumulation of reserves, and the high ratio borne by capital and reserves to premium income must be a cause of satisfaction to policyholders.

§ 8. Marine Insurance.

No returns are available in regard to Marine Insurance. It may, however, be stated, that the Commonwealth Parliament in 1909 passed an Act (No. 11 of 1909, "An Act relating to Marine Insurance") which was assented to on the 11th November, 1909. This

Act materially alters some of the conditions under which marine policies have heretofore been issued.

§ 9. Friendly Societies.

1. **General.**—Friendly societies are an important factor in the social life of the community, as probably nearly one-third of the total population of the Commonwealth comes either directly or indirectly under their influence. Their total membership is about 450,000, but as certain benefits, such as medical attendance and free medicine and in many cases funeral expenses, are granted to members' families as well as to members themselves, this figure must, even when due allowance is made for young and unmarried members, be multiplied by four at the least to arrive at the total number of persons more or less connected with these societies. Legislation has conferred certain privileges on friendly societies, but, on the other hand, it insists on their registration, and it is the duty of the Registrars in the various States, prior to registering a new society, to see that its rules are conformable to the law, and that the scale of contributions is sufficiently high to enable the promised benefits to be conferred on members. Societies are obliged to forward annual returns as to their membership and their finances to the Registrar, and elaborate reports are published in most of the States dealing with the returns thus received.

In the following tables the figures refer to the year 1912, except those for South Australia, which refer to the quinquennium 1905-9.

2. **Number of Societies, Lodges, and Members.**—The total number of societies registered in New South Wales is 62; in Victoria, 47; in Queensland, 20; in South Australia, 16; in Western Australia, 16; and in Tasmania, 11. No total is given of these figures for the Commonwealth, as the societies shewn in one State are in most cases represented in all the other States. The number of different lodges, the total number of benefit members at the end of the year, and their average number during the year are shewn in the following table:—

FRIENDLY SOCIETIES.—LODGES AND MEMBERS, 31st DECEMBER, 1912. (a)

State.				Number of Lodges.	Benefit Members at End of Year.	Average No. of Benefit Mem- bers during Year.
New South Wales	...	...	...	1,853	160,179	153,408
Victoria ...	...	...	...	1,505	153,921	151,262
Queensland	...	...	...	519	47,204	46,208
South Australia	...	...	...	529	58,292	(b)
Western Australia	...	...	...	289	18,901	18,269
Tasmania	...	...	...	196	22,480	(b)
Commonwealth ...				4,891	460,977	(b)

(a) See, however, paragraph 1, above. (b) Not available.

3. **Sickness and Death.**—Sick pay is generally granted for a number of months at full rates, then for a period at half rates, and in some societies is finally reduced to quarter rates. The following table shews the total number of members who received sick pay during the year, the number of weeks for which they received pay in the

aggregate, and the average per member sick, and further the number of benefit members who died during the year, together with the proportion of deaths per thousand average members:—

FRIENDLY SOCIETIES.—SICKNESS AND DEATH, 1912. (a)

State.	Number of Members who received Sick Pay.	Total Number of weeks Sick Pay granted.	Average No. of weeks per Member sick.	Deaths of Benefit Members and Wives.	Proportion of Deaths to 1000 average Benefit Members.
New South Wales	35,800	212,844	5.95	1,189	7.75
Victoria ...	28,112	223,475	7.95	1,744	11.54
Queensland ...	7,895	47,417	6.01	327	7.09
South Australia ...	8,971	86,768	9.67	497	(b)
Western Australia	2,688	15,202	5.65	133	7.28
Tasmania ...	4,279	24,253	5.67	192	(b)
Commonwealth	87,745	609,959	6.95	4,082	(b)

(a) See, however, paragraph 1. (b) Not available.

4. **Revenue and Expenditure.**—The financial returns are not prepared in the same way in each State, but an attempt has been made in the subjoined table to group the revenue under the main headings:—

FRIENDLY SOCIETIES.—REVENUES, 1912. (a)

State.	Entrance Fees, Members' Contributions, and Levies.	Interest, Dividends, and Rents.	All other Income.	Total Revenue.
	£	£	£	£
New South Wales ...	456,000	69,599	32,493	558,092
Victoria ...	437,607	93,675	49,089	580,371
Queensland ...	155,471	25,549	...	181,020
South Australia ...	(b) 130,096	31,167	(c) 65,293	226,556
Western Australia ...	52,778	10,134	32,647	95,559
Tasmania ...	62,080	7,414	6,339	75,833
Commonwealth ...	1,294,032	237,538	185,861	1,717,431

(a) See, however, paragraph 1. (b) Excluding levies. (c) Including levies.

The returns relating to expenditure are more complete than those relating to revenue, and can be shewn in full for every State. The figures shew that the excess of revenue, amounting in the aggregate to £325,182, was divided amongst the six States as follows:—New South Wales, £90,896; Victoria, £115,068; Queensland, £52,108; South Australia, £37,588; Western Australia, £18,878; and Tasmania, £10,644. The revenue exceeded the expenditure by about fifteen shillings per average benefit member, a margin which cannot be called very large.

FRIENDLY SOCIETIES.—EXPENDITURE 1912. (a)

State.	Sick Pay.	Medical Attendance and Medicine.	Sums Paid at Death of Members & Members' Wives.	Administration.	All other Expenditure.	Total Expenditure.
	£	£	£	£	£	£
New South Wales	166,270	157,821	33,982	66,469	42,654	467,196
Victoria ...	152,085	153,004	30,919	74,266	55,029	465,303
Queensland ...	35,548	52,648	13,643	27,073	(b)	128,912
South Australia ...	50,979	28,305	22,998	24,526	62,160	188,968
Western Australia	12,414	17,963	2,330	14,138	29,836	76,681
Tasmania ...	19,732	18,362	11,728	11,328	4,039	65,189
Commonwealth	437,028	428,103	115,600	217,800	193,718	1,392,249

(a) See, however, paragraph 1. (b) Included in "Administration."

It appears from the above figures that sick pay averaged about fourteen shillings per week, but, as the returns include pay at half and quarter rates, and as the proportion of these to full rates is not stated, the average given must be taken for what it is worth. Medical attendance and medicine came to about one pound per average benefit member, or to nearly £5 per member who received sick pay during the year.

5. Funds.—The two foregoing tables shew that the surplus of revenue over expenditure amounted to £325,182 for the year, and a small surplus must, of course, result annually in every society which levies adequate contributions to enable it to meet all possible claims. These accumulations of profits are generally invested, and the subjoined table shews for all of the six States the division into invested and uninvested funds :—

FRIENDLY SOCIETIES.—FUNDS, 31st DECEMBER, 1912. (a)

State.	Invested Funds.	Uninvested Funds.	Total Funds.
	£	£	£
New South Wales ...	1,521,998	75,246	1,597,244
Victoria ...	2,277,014	84,450	2,361,464
Queensland ...	602,792	27,298	630,090
South Australia ...	887,318	35,287	922,605
Western Australia ...	182,132	11,259	193,391
Tasmania ...	202,662	13,672	216,334
Commonwealth ...	5,673,916	247,212	5,921,128

(a) See, however, paragraph 1.

The total funds amounted, therefore, to £12 16s. 11d. per member at the close of the year under review.

§ 10. Probates.

1. Number of Probates and Letters of Administration and Value of Estates.—The value of the estates left by deceased persons gives a fair view of the distribution of property among the general population. There occurred in 1912 the deaths of 35,965 adult persons, while the total number of probates and letters of administration granted

during the same period was 11,251. It would therefore appear that about five in every sixteen adults who died during the year were possessed of sufficient property to necessitate the taking out of probate. The details for each State are shown in the table hereunder:—

PROBATES AND LETTERS OF ADMINISTRATION, 1912.

State.	Number of Estates.			Value of Estates.		
	Probates.	Letters of Administration.	Total.	Probate.	Letters of Administration.	Total.
				£	£	£
New South Wales	3,648	(a)	3,648	13,389,806	(a)	13,389,806
Victoria ...	3,143	1,442	4,585	8,533,502	(a)	8,533,502
Queensland ...	518	237	755	2,447,217	282,822	2,730,039
South Australia ...	985	261	1,246	1,883,717	109,389	1,993,106
Western Australia	303	249	552	522,185	83,437	605,622
Tasmania ...	361	104	465	912,160	71,458	983,618
Commonwealth	8,958	2,293	11,251	27,688,587	547,106	28,235,693

(a) Included with Probates.

Intestate estates to the value of £160,632 were placed under the control of the Curator during the year, and £20,855 unclaimed money paid into Consolidated Revenue. The details for each State are shewn hereunder:—

INTESTATE ESTATES, 1912.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	C'with.
Intestate estates placed under control of Curator during 1912							
Number ...	724	334	659	145	312	116	2,290
Value ...	£ 55,833	27,960	35,956	18,483	19,387	3,013	160,632
Unclaimed money paid into Consolidated Revenue by Curator during 1912	£ 7,922	6,865	3,866	1,108	1,094	...	20,855

This would make the average value of each estate £2510, and the average value of property left by each adult who died in 1912, £785.

SECTION XXII.

PUBLIC INSTRUCTION.

§ 1. Evolution of Educational Systems in Australia.

1. **Educational Systems of the States.**—(i.) *Place of New South Wales in Australian Education.* The first settlement in Australia being in New South Wales, it is but natural that Australian education should have had its beginning in that State. In the evolution of educational method and system in Australia, New South Wales also has played a leading part, and has had practically a dominating influence. For that reason an account of the evolution of education in this State contains, as it were, the key to the understanding of the Australian attitude to this question. The subject is dealt with in some detail in No. I. and No. II. issues of the Commonwealth Official Year Book, but it is not proposed to repeat it in the present volume. (See also 2 hereunder.)

(ii.) *Educational Systems of Commonwealth States.*—A more or less detailed account of the origin and development of the primary educational systems of the other States also appears in No. I. and No. II. issues of the Year Book. Later details are given hereunder.

2. **Recent Development in State Educational Systems.**—(i.) *New South Wales.* Amongst the more important developments in this State may be mentioned the new scheme of secondary education, which came into operation in 1911, and which provides for courses of study extending over four years, for new conditions of entrance, and for the abolition of fees in the Public High Schools. The courses of study are designed to furnish a preparation for various types of vocation, and have been arranged in four groups:—(1) General course leading to the professional studies of higher institutions; (2) a commercial course; (3) a technical course, and (4) a domestic course.

The regulations provide for certificates marking three definite stages in the course—(a) the “qualifying” certificate, shewing that the holder has completed the primary course; (b) the “intermediate” certificate, marking the end of the first two years of High School course; and (c) the “leaving” certificate, indicating the successful graduation through the whole course and the passing of the prescribed final examination. Arrangements have been made with the University authorities for the acceptance of the leaving certificate in lieu of the matriculation examination.

The passing of the University (Amendment) Act of 1912 constitutes an epoch-making event in the history of educational development in New South Wales. It is claimed that the enactment of this measure completes the chain of co-ordination in the State educational system. Under a liberal provision of scholarships and bursaries it is now possible for the poorest child, without expense to his parents, to pass through the various stages from kindergarten to any of the faculties at the University. More extended reference to the University Act will be found in § 5 (i.) hereinafter.

(ii.) *Victoria.* Under the Amending Education Act of 1910 it is provided that every child must attend school for the full period of eight years between 6 and 14, unless he be given a certificate of education at 13. The schools are open on an average 225 days in each year, and require attendance on all these days, unless reasonable excuse is forthcoming. Provision is made for the mentally deficient. After completion of the elementary school course, the pupil may go on to the evening continuation schools, higher elementary schools, district high schools, or the trade schools. A Council of Public Education has been appointed to advise on educational matters generally, and

particularly in regard to co-ordination. Amongst the new features recently introduced are the recasting of the scheme of study for primary schools and the inauguration of a uniform school year. Acting on the advice of the Council of Education, the Melbourne University has established a Schools Board. The function of this body is to consider all questions relating to school studies and the inspection and examination of schools. In addition to University representation, there are also on the Board representatives of the Department of Education, the registered secondary schools, and the business interests of the community. Being clothed with such wide powers, this Board must of necessity be the chief guiding factor in the development of education in Victoria.

(iii.) *Queensland.* The Amending Act of 1910 introduced several new features into the educational system of Queensland, chief amongst them being—(a) employment of proceeds of sales of land and other school property for school purposes, instead of being paid into Consolidated Revenue; (b) abolition of local contributions; (c) provision of scheme of school certificates to assist in co-ordination of various branches of the system; (d) establishment of compulsory continuation classes; (e) compulsory medical and dental examination; (f) raising the compulsory age to 14 years instead of 12 years; (g) provision for compulsory attendance on every day on which the school is open. The last mentioned provision has already produced good results in regard to improved attendance.

(iv.) *South Australia.* One of the chief events in educational development in South Australia in 1911 was the provision of evening continuation schools, intended to help those who cannot afford to attend the higher day schools. It is proposed also to fall into line with the other States in the matter of medical supervision of school children, and provision has been made for the appointment of a medical officer, a dental officer, and two trained nurses. The changes introduced at the Teachers' Training College have proved very satisfactory, and the academic teaching at the University is now supplemented by systematic pedagogic instruction for all classes of teachers. In their reports for the year 1912, the inspectors state that the improved quality of the work in many of the smaller country schools is due to the training which the State provides for teachers prior to their appointment.

(v.) *Western Australia.* During 1912 the curriculum of the primary schools was remodelled in order to bring it into line with the most up-to-date principles. The work was lightened in directions where experience shewed there was overloading, and efforts were particularly directed towards the removal of the abstract and to the development of the imaginative and constructive throughout all grades. The scheme of bringing about a closer correlation between primary and secondary education was further advanced during the year. The Modern School, opened in 1911, was strengthened, and it is proposed to establish High Schools at the larger country centres. In the smaller towns facilities are to be given to children who propose to remain in the upper classes. School-leaving Certificates will confer the right of admission to the Arts and Science courses at the University, and special provision will be made for pupils desirous of qualifying for commercial or agricultural pursuits.

(vi.) *Tasmania.* The most important features in the development of education in Tasmania during 1912 were the establishment of subsidised schools, the taking of preliminary steps towards the establishment of State High Schools, and the adoption of more effective measures to secure regular attendance.

(vii.) *Present Position of State Education in Australia.* Throughout Australia primary education is compulsory and free, while there exists in most of the States a liberal provision of scholarships and bursaries to the Higher State Schools, to the Secondary Schools, and to the Universities.¹ Provided that the requisite standard is reached, it is, of course, permissible for children to receive home tuition, or to attend so-called private

1. Universities have been in existence for some time in New South Wales, Victoria, South Australia, and Tasmania. The University of Queensland was opened in March, 1911, and a University was opened in 1913 in Western Australia.

schools. Considerable interest is taken in educational matters by the people of the Commonwealth, and within the last few years several of the States have sent qualified representatives to inspect and report on the methods adopted in the chief countries of Europe and America. The reports of these Commissioners, especially those of New South Wales, have been widely studied, and various improvements have been made in accordance with their recommendations. The orientation, lighting, and ventilation of school buildings are being modernised. In all of the States periodical medical inspection of the children is in force. (A detailed statement of the work being done in this direction will be found in the chapter dealing with Public Hygiene.) Methods of training teachers are now better developed, and although the "pupil teacher" system and its effects have not been wholly eliminated, it appears to be gradually vanishing. (The methods adopted in the various States for the selection and training of teachers are described in some detail in § 2, par. 10, hereinafter.) There has been a wider employment of kindergarten principles in the early stages, and the more or less purely abstract teaching of the older days has been largely replaced by concrete methods. Such subjects as nature study, manual training, music, and drawing have received a general impetus. Greater attention has been given to the scientific classification of pupils. Moreover, as will be seen from the above and from § 2, par. 6, the State Education Departments are increasing their activities in the direction of secondary education. Lastly, the system of inspection has been considerably remodelled. Under the old system, the inspector was little more than an examining officer, but, under the present régime, the primary duty of these officers consists in guiding and directing the teaching in accordance with approved methods.

(viii.) *Co-ordination of Educational Activities.* As pointed out already, the educational system of New South Wales may now be considered as a more or less homogeneous entity, the various stages succeeding one another by logical gradation from kindergarten to university. In the other States development is proceeding on somewhat similar lines, although in varying degree.

§ 2. State Schools.

1. *Introductory.*—The State Schools, or, as they are sometimes termed, the "public" schools, of the Commonwealth comprise all schools directly under State control, in contradistinction to the so-called "private" schools, the bulk of which, though privately managed, nevertheless cater for all classes of the community.

2. *Enrolment and Attendance.*—The following table shews the number of State Schools, together with the teachers employed and the enrolment and "average attendance" in each State during the year 1912:—

STATE SCHOOLS, TEACHERS, AND SCHOLARS, 1912.

(COMMONWEALTH.)

State or Territory.	Schools.	Teachers.*	Scholars Enrolled.	Average Attendance.
New South Wales†	3,234	6,454	235,803	171,028
Victoria	2,178	5,567	209,209	154,410
Queensland	1,278	2,992	95,641	77,385
South Australia	768	1,473	58,273	40,838
Western Australia	536	1,189	38,184	32,959
Tasmania	396	840	25,368	19,561
Northern Territory	3	3	98	71
Commonwealth	8,393	18,518	662,576	496,252

* Exclusive of sewing mistresses.

† Including Federal Territory.

Unfortunately, the schemes of enrolment and of the computation of "average attendance" are not identical in each State, so that the comparisons are imperfect. The average attendance at High Schools in South Australia is not recorded, and the necessary figures were obtained by an estimate based on enrolment. In the case of Victoria, returns were not available in regard to attendance at District High Schools and Higher Elementary Schools, and these totals were similarly estimated. That the educational statistics of each State of the Commonwealth should be made up in the same way is much to be desired.

The enrolment and average attendance at the State Schools in the Commonwealth are given below for the years 1891, 1901, and for each year of the period 1908 to 1912:—

ENROLMENT AND ATTENDANCE AT STATE SCHOOLS, 1891 to 1912.

(COMMONWEALTH.)

Year.	Total Population.	Enrolment.	Average Attendance.	Year.	Total Population.	Enrolment.	Average Attendance.
1891	3,240	561,153	350,773	1910	4,425	627,910	455,870
1901	3,824	638,478	450,246	1911	4,569	638,850	463,799
1908	4,232	618,836	446,146	1912	4,733	662,576	496,252
1909	4,323	624,236	458,260				

1. In thousands.

It will be seen from the above table that, despite the increase of population, the official figures of enrolment and average attendance at the State Schools of the Commonwealth shew unsatisfactory results, although an upward tendency is evident in the figures for 1911 and 1912. An examination of the graphs on pages 204 to 206, shewing birth-rate, will make it apparent that this is at least in part due to the diminished birth-rate of past years.

Schools in the Federal Capital Area. During the year 1912, twelve State Schools were in operation in the Federal Territory (Yass-Canberra). The pupils enrolled numbered 297 and the average attendance 186. Cost of upkeep in 1912 amounted to £2473.

3. Centralisation of Schools.—The question of centralisation of schools adopted so successfully in America has received some attention in the Commonwealth, and particularly in New South Wales. It is recognised that a single adequately-staffed and well-equipped central institution can give more efficient teaching than a congeries of small scattered schools in the hands of less-highly trained teachers, and the small schools in some districts were therefore closed and the children conveyed to the central institution. The principle was first adopted in New South Wales in 1904, when the conveyance of pupils was authorised in the case of twelve schools. In 1912 subsidy was paid for conveyance to eighty schools.

4. Education in Sparsely-settled Districts.—It has always been the aim of the State to carry the benefits of education into the remotest and most sparsely-settled districts. This is effected in various ways. (i.) By the establishment of Provisional Schools, *i.e.*, small schools in which the attendance does not amount to more than about a dozen pupils, these institutions merging into the ordinary public school list when the attendance exceeds the minimum. (ii.) When there are not enough children to form a provisional school, what are known as Half-time Schools are formed, the teacher visiting them on alternate days. In still more sparsely-peopled districts an itinerant teacher goes from house to house within a certain radius. Thus in Queensland during 1912 the seventeen itinerant teachers covered 490,000 square miles of country and travelled 55,320 miles. In this State also the Education Department has established what are known as Saturday Schools, in which small groups of children in outlying districts are visited by the nearest

teacher on Saturdays and receive the benefit of several hours' instruction. These schools, of which there are now ten, have been warmly welcomed in the districts in which they are established, inasmuch as under this system the children "outback" receive a greater amount of instruction than is possible under the system of itinerant teachers. During 1912 the Education Department in Western Australia disbursed over £2000 in "driving grants," i.e., sums of money granted to parents whose homes are over three miles from the nearest school, and who arrange to have their children driven in. In New South Wales and Western Australia parents in the thinly-peopled areas are also allowed to club together and build a school, which receives aid from the Government in the form of a yearly subsidy and grant of school material. (iii.) An experiment on the part of New South Wales, the result of which was awaited with some interest, was the establishment in 1908 of a "travelling" school. A van was provided in which the teacher travelled, carrying with him a tent for himself and one to be used as a school, together with such books and apparatus as are required in a primary school. So far very satisfactory results have been attained. (iv.) There are also railway camp schools in operation on the sites of extensive railway works. Regulations were framed in Tasmania during 1912, providing for the subsidising of private teachers at a rate not exceeding £5 per pupil in districts too remote or sparsely settled to warrant the establishment of an ordinary provisional school. The schools of this nature established in 1912 numbered 13, with an enrolment of 138 scholars. During the year the department also paid for the conveyance of 363 children to schools by boat, vehicle, or train.

5. Evening Schools.—Evening Public Schools have been in existence for many years in some of the States, but their progress has been uncertain. In New South Wales there were, during 1912, three Evening Primary Schools, but seven others were absorbed by the Evening Continuation Schools; Victoria had six schools, with enrolment of 547, and an average attendance of 192; and Western Australia has continuation classes in the chief centres. Up to the end of 1910 the evening schools in New South Wales aimed chiefly at giving primary instruction, but in October of that year Evening Continuation Schools of two types were established—(i.) Artisan Schools for boys learning trades; and (ii.) Commercial Schools for boys starting in business. In December, 1912, there were thirty-one schools in operation in the metropolitan district, and seventeen in the country districts. The total weekly attendance for the year was 1852. Evening Continuation Schools have been established under regulation in South Australia, and are intended principally to help the working boy to improve his general education and to add to the store of knowledge most useful in his present work.

6. Higher State Schools.—(i.) In *New South Wales* public schools, which provide advanced courses of instruction for two years for pupils who have completed the primary course, are classed as *Superior Schools*. These were reorganised in 1912, and divided into Superior Commercial Schools, Superior Junior Technical Schools, and Superior Domestic Schools for Girls. At the beginning of 1913 there were twenty-six schools in the Commercial group, four in the Junior Technical, and ten in the Domestic group, with an enrolment of 78,457, and average attendance of 58,964. Provision has also been made for the more advanced education of children in country centres by the establishment of twenty-seven District Schools. These schools are specially staffed, and undertake the work of preparing students for admission to the training colleges. There are also twelve *High Schools* in the State. These had an enrolment in 1912 of 1772 boys and 1230 girls, with an average attendance of 1425 boys and 962 girls. In connection with the development of secondary education in New South Wales, a liberal scheme of scholarships has been provided, 300 bursaries and 514 scholarships having been allotted as a result of the examination for the qualifying certificate. Fifty intermediate scholarships and twenty-four University bursaries were awarded, together with twenty-two technical scholarships, and three scholarships at the Hawkesbury Agricultural College were granted to pupils of the Hurlstone Agricultural High School.

The Sydney Grammar School (not a "State" School in the ordinary acceptance of the term), which receives a State endowment of £1500 a year, had, in 1912, a quarterly enrolment of 561 pupils, and an average attendance of 522.

(ii.) In *Victoria*, action was taken in January, 1912, to give effect to the provisions of the Education Act of 1910, with regard to the decentralization of the system of secondary education. Eighteen Higher Elementary Schools are established, while the number of District High Schools was increased to nineteen. With the exception of the Melbourne High School the whole of the institutions are in country centres. The enrolment at the Higher Elementary Schools in 1912 was 1130, of whom 548 were girls, and at the District High Schools 2384, of whom 1138 were girls.

Scholarships granted by the Department are as follows :—(a) Forty ordinary, tenable for four years at a District High School or approved Secondary non-State School : (b) Forty agricultural, mining, and veterinary, tenable for four years at a High School or Secondary School, with a view to proceeding to a diploma at the University : (c) Forty junior teacher course, tenable for two years, enabling holder to obtain free tuition at a State High School in the course prescribed for junior teachers. Various scholarships are also granted by the councils of State Agricultural High Schools. There are also twenty ordinary and twenty agricultural, mining, and veterinary exhibitions open for competition.

(iii.) Prior to the year 1912, *Queensland* did not possess any distinctly secondary schools under State control, but in February of that year High Schools were opened at Warwick, Gympie, Bundaberg, Mount Morgan, Mackay, and Charters Towers. Tuition at these schools is free, but students must pass a qualifying entrance examination. In smaller centres it is intended to provide secondary tuition at existing State Schools where the attendance warrants it, and this has been arranged for at Herberton, Childers, and Gatton. The enrolment at High Schools in 1912 was 754, and the daily attendance 566. There are, moreover, ten Grammar Schools—six for boys and four for girls, each of which is subsidised by the State to the extent of £750 per annum, and in addition receives a payment of £250 per annum for providing district scholarships, as well as £12 12s. per annum on account of each open scholarship owner in attendance. These scholarships, fifty in number, are granted to State School pupils. In order to conserve the interests of children of poor parents, it is proposed to make the scholarships available at any State High School, Technical School, Grammar School, or approved Secondary School, and to grant allowances up to £30 per annum to students who must live away from home, and £12 to those who live at home. The enrolment at the Grammar Schools in 1912 was 1280, and the average attendance 1141. Since the year 1909 these schools have been regularly examined by the Inspector-General of the Education Department.

(iv.) *South Australia*. Including the Adelaide High School, there were altogether nineteen District High Schools open in South Australia in 1912, with an enrolment of 2775 students, and a teaching staff of 78. In addition to giving secondary education, these institutions form a valuable source from which the Department can draw a supply of young teachers. Under existing regulations provision is made for the following scholarships :—(i.) Eight public exhibitions open to boys and girls who have been *bond fide* residents of South Australia for two years prior to the competitive examination. The exhibitions are tenable for three years at an approved school or college, carry free tuition and books, and an allowance of £22 per annum when the holder lives away from home. (ii.) Forty exhibitions, tenable for three years at a High School, are open to competition by children under 13 years of age in attendance at State primary schools. (iii.) Eight senior exhibitions, worth £40 per annum, and four of the value of £20, are tenable at the Adelaide High School, and are open to pupils of any High School under State control. (iv.) Twelve Government bursaries, of which six are reserved for pupils of the Adelaide High School. These are tenable at the University, and the holder receives £20 per annum and free tuition.

(v.) *Western Australia.* A Modern School, designed to give a four years' course to pupils admitted at about the age of 13 years, was opened in Perth early in 1911. The first two years of the course are to a large extent common to all, but in the final two years specialization is aimed at, in order to meet the needs of future University students, teachers, agriculturists, scientific and business men; and, in the case of girls, to give tuition in domestic economy to those desirous of it. At the end of 1911 there were 337 students, but when the additional buildings are completed there will be accommodation for 400. No fees are charged at the Modern School. During 1909 the upper classes of schools in the largest centres of population were brought together into central schools, in order to secure more economical and effective teaching, and it is intended that these central institutions shall form the nucleus of future High Schools. Continuation classes were inaugurated in 14 centres in 1911, and were attended in 1912 by about 1200 pupils. The classes are intended to provide some measure of higher education to those who leave school as soon as they reach the compulsory age of 14 years. Admission to these classes is free, but pupils must attend regularly three evenings a week. Evening Schools are held in various parts of the State, but the work carried on is mainly primary. Exhibitions and scholarships at present in force comprise three University exhibitions valued at £150 each, tenable for three years at any registered University in the British Empire, seven senior exhibitions valued at £25 each tenable for one year, and 12 junior exhibitions, valued at £15 each, also tenable for one year.

(vi.) *Tasmania.* Up to the year 1912 the Department confined its efforts to the provision of primary education for the school children in Tasmania. In 1911, however, super-primary classes were formed in the larger schools, with an enrolment in 1911 of 200, and in 1912, of 400 pupils. It was recognised, however, that the previously existing scheme of scholarships and exhibitions was inadequate to meet the demands for higher education. High schools were therefore opened in January, 1913, at Hobart and Launceston, with an enrolment of 150 and 110 pupils respectively. These will cater for five classes of pupils—(i.) Those who desire to become teachers; (ii.) University students; (iii.) Commercial; (iv.) Mechanics; (v.) Home duties (girls). It is proposed to grant a leaving certificate at the end of a four years' course.

7. Agricultural Training in State Schools.—The question of agricultural training in ordinary schools has received considerable attention in *New South Wales*. In 1905 a teacher of school agriculture was appointed to visit schools and districts for the purpose of giving instruction to teachers and scholars in the subject, the officer selected possessing the dual qualifications of a thorough acquaintance with agricultural work and school methods. The Education Department makes grants of seeds of various kinds to the schools having gardens, and in some instances has installed windmill plants to provide an adequate water supply. Under the direction of a capable head master, a college has also been opened at Hurlstone, near Sydney, at which practical lessons are given in elementary agriculture, and the institution also serves as a stepping-stone to the Hawkesbury Agricultural College. Scholarships are available to students of the Hurlstone Agricultural High School as it is now called, and these scholarships entitle the holder to a two years' free course at the Hawkesbury institution, with a grant of £1 10s. per annum for text books. The Department has also organised Rural Camp Schools for the purpose of giving teachers and scholars first hand knowledge of country industries. Schools of this nature were held in 1912 at Nowra, Camden, and Tamworth, the total attendances for the year being 1528 boys, and 109 masters.

The subject of Agricultural Colleges and Experimental Farms is dealt with in the section relating to Agriculture. (See page 356.)

In *Victoria*, what are termed Agricultural High Schools have been established at Ballarat, Colac, Leongatha, Mansfield, Mildura, Sale, Shepparton, Wangaratta, Warra-gul, and Warrnambool. Pupils must be at least fourteen years of age, and have passed beyond the curriculum of the elementary school, or else be able to afford satisfactory proof that they are qualified to profit by the instruction offered. The schools are

practically secondary schools with an agricultural bias, and form a link between the rural school and the agricultural college. They are also used as a preliminary stage in the education of boys and girls who wish to become teachers and eventually graduate in the State Training College and the University. A local council is appointed for each school, and exercises a general oversight over its operations. The experimental plots at these schools have aroused much interest among the farmers from the surrounding districts. A Supervisor of Agriculture reports and gives advice on the teaching of agriculture in the State Schools. A fair number of teachers have gained diplomas in agriculture, and will be in a position to give practical instruction at the High Schools. The elementary principles of agriculture are now taught in about 700 State Schools. A Horticultural Society has recently been established in connection with State Schools, and has now 650 schools in affiliation.

Although *Queensland* possesses an Agricultural College and several experimental farms, there is no agricultural institution directly connected with the Education Department. The Government, however, provides a small grant to encourage the study of agriculture, horticulture, and kindred subjects in the State Schools, while a departmental teacher of agriculture visits the schools and gives assistance in agricultural, horticultural, and nature study work. Some excellent experimental work has been carried out at a few of the schools, while gardens have been established wherever circumstances permitted. Short courses of instruction for teachers have been instituted at the Gatton College. A large number of teachers have gained a practical knowledge of milk and cream testing, and the subject is now added to the programme of instruction in several of the dairying districts.

In *South Australia* the Public Schools' Floral and Industrial Society, founded in 1880, holds annual exhibitions of school work from all parts of the State. In addition, it has for some years undertaken the distribution of flower seeds among school children at a very cheap rate, and has thus fostered the love of horticulture with remarkable success. A special instructor has been appointed to give assistance to teachers desirous of making their school gardens aid in nature study work.

In *Western Australia* an advisory teacher of nature study visits the schools and gives advice in regard to proper methods in horticulture and experimental agricultural work. The number and usefulness of the gardens and experimental plots attached to State Schools shew marked improvement each year.

8. **Teachers in State Schools.**—The distribution of the teaching staff in the State Schools during the year 1912, including teachers of needlework, was as follows:—

TEACHING STAFF IN STATE SCHOOLS, 1912.

(COMMONWEALTH.)

State.	Principal Teachers.		Assistants.		Pupil or Junior Teachers.		Sewing Mis- tresses.	Total.		
	Males.	Fem.	Males.	Fem.	Males.	Fem.		Males.	Fem.	Total.
New South Wales	2,334	689	1,106	2,325	..	..	105	3,440	3,119	6,559
Victoria ...	1,587	801	349	1,165	363	1,302	437	2,299	3,705	6,004
Queensland ...	744	522	305	757	288	376	..	1,337	1,655	2,992
South Australia ...	322	426	100	434	41	150	111	463	1,121	1,584
Western Australia ...	297	228	108	440	19	97	64	424	829	1,253
Tasmania ...	183	216	31	152	55	203	1	269	572	841
Northern Territ'y	1	2	..	..	..	..	1	1	3	4
Commonwealth	5,468	2,884	1,999	5,273	766	2,128	719	8,233	11,004	19,237

It will be observed that there is a fairly large number of junior teachers, or pupil teachers, as they are called in most of the States. The pupil teachers will, however, in

time disappear, and their places will be filled by young people who have undergone a course of training in schools specially provided for the purpose. Allusion to the methods of training will be found in the next paragraph.

9. Training Colleges.—The development of the training systems of the various States has been alluded to at some length in earlier issues of the Year Book. The present position is as follows :—

(i.) *New South Wales.* During 1912, the total number of students in the Blackfriars Training College was 327, women students numbering 222. A branch institution was opened early in 1911 at Hereford House for the training of candidates for the position of teacher or assistant at small country schools, and this was attended in 1912 by 230 students. At the various district schools there were, during 1912, 168 first-year and 204 second-year probationary students, and of these 221 passed the entrance examination for the Training College. Several of the larger metropolitan schools are used as practice schools for giving training college students opportunity to acquire practical skill in teaching. At the College a complete set of Montessori apparatus has been prepared for demonstration work on the Montessori principles, and one of the College staff was recently sent to Italy in order to gain first-hand knowledge of the possibilities of the scheme. The Principal of the Training College is also Professor of Education at the Sydney University.

(ii.) *Victoria.* Candidate teachers in this State are trained in the District High Schools or Agricultural High Schools, the period of probation being supplemented by a course of training for two years in the Senior Training College at Melbourne. There are twenty District High Schools now in operation, of which ten give training in elementary agriculture. The present Training College dates back to 1874, but during the retrenchment period, viz., from 1893 to 1900, it was closed. The institution was reopened in February, 1900, with an enrolment of fifty-seven students. By the 30th June, 1912, the number had increased to 111. The College lectures are also attended by considerable numbers of private students qualifying for certificates as Infant, Kindergarten or Primary teachers. A Training College Hostel has been established and a Correspondence class formed for country teachers desirous of qualifying for the Infant Teachers' Certificate. The students at the Hostel receive training in domestic economy. Five city and four country practising schools are attached to the Training College. The University Practising School, with an enrolment of 180 in 1912, gives teaching practice for secondary students taking the diploma course at the Melbourne University.

(iii.) *Queensland.* There is no Training College in Queensland at the present time, but it is hoped ere long to establish one at Brisbane in affiliation with the University of Queensland. Section 6 of the University Act provides for the creation of a Training College, but the erection of the necessary building has been deferred owing to lack of funds. In the meantime the following scheme has been evolved :—Twenty-five special Teacher Scholarships to the University, each with a currency of two years, are to be awarded annually. Living allowances at the rate of £52 per annum and £26 per annum respectively are provided, the former being paid to students living away from home. The University is to provide an Education group of subjects, including Logic, Psychology, and Education. Ten of the scholarships may be carried on for a third year, and five for a fourth year. Practical training will be entrusted to a Training Master appointed by the Department. Those who attend the two years' course will be appointed to the Primary Schools, and the graduates from the three and four years' course will be available for High Schools and Secondary Schools. Young people of both sexes are admitted to the service as pupil-teachers at the age of fourteen years, the only training received being that given by the principals of the schools to which they are appointed. The schools for infants at Kangaroo Point and Rockhampton have, however, been specially staffed and equipped for training Kindergarten teachers, and Kindergarten methods have been introduced into most of the larger schools.

(iv.) *South Australia.* During the year 1910 the system of training in force in South Australia was remodelled and improved. Prior to this year students had devoted themselves chiefly to academic studies, but in 1910 provision was made for increased attention to the theory and practice of teaching. District courses of training were established to prepare teachers for work in primary and infant schools, and an advanced course was outlined for those who will become High School teachers. Each of these courses extends over a year. Students in the primary course who shew special ability may be granted a second year's training. The special course for Secondary Schools will give students an opportunity of obtaining the Diploma of Education. There were 44 students in the Training College in 1912. At the Adelaide High School there were 97 students training for teachers at the end of 1912. Practice in teaching is gained by the student teachers at the Observation School, which also provides training for teachers qualifying for appointment to provisional schools. Twenty-six candidates passed the prescribed test for admission as pupil teachers.

(v.) *Western Australia.* A Training College for teachers was opened at Claremont in 1902. The original building provided accommodation for sixty students, but extensions were opened in 1908, and the number in training during 1912 was 116, of whom 50 were teachers of small schools undergoing a special course. The course in the Training College lasts two years. Central classes for "monitors" (*i.e.*, pupil teachers) were established at Perth in 1903, and monitors outside the metropolitan area are instructed by correspondence. A Normal School was established in Perth in 1907 for the purposes of providing a two years' course of higher instruction for a limited number of children who had completed the State School course and intended to become teachers. The pupils in attendance during 1910 numbered 59, of whom 33 were girls. In February, 1911, the Normal School was closed and replaced by a better equipped institution known as the Modern School. To assist teachers of small schools to gain some experience of the best method of school management, a Model School has been established at Gosnell's, and arrangements have been made for intending teachers, as well as those actually in charge of small schools, to spend a portion of their time at this institution. Special courses of instruction have been instituted to provide training for applicant teachers for small country schools, this plan being adopted to meet the growing demand for teachers in newly settled areas. Moreover, the schools of instruction for teachers in charge of the smaller country schools are held in different centres by district inspectors, as well as in Perth; an advisory teacher visits the schools in outlying districts, while camps of instruction are held to give practice in cadet training.

(vi.) *Tasmania.* In this State the scheme for training teachers has recently been remodelled with a view to increased efficiency, and the new provisions will come into operation in 1914. Prior to entering the Training College, students will be required to attend a High School for four years. After obtaining the leaving certificate, the candidates will be drafted to selected schools to serve as junior teachers for a year, in order to gain such knowledge as will enable them to more fully appreciate the professional training at the college in the following year. Trainees will attend at the University for instruction in the higher branches of certain subjects, and in some cases will be given a second and third year to enable them to qualify for Arts or Science degrees. During the year 1912 there were 105 students in attendance at the Training College. A Summer School for teachers was held in Hobart during 1912. It is intended shortly to establish model country schools as adjuncts to the practising schools.

10. School Savings Banks. — Returns shew that these institutions are in existence in three States. In New South Wales, there were 719 banks at the end of 1912, the deposits amounting to £30,221, and withdrawals to £29,911. Since the establishment of the banks in 1887, deposits totalled £435,983, and withdrawals £423,864. Of the latter

sum £102,478 was placed to the children's accounts in Savings Banks. In South Australia, 245 schools had 10,216 depositors, with £8682 to their credit; and in Western Australia, there were 237 school banks, with 12,743 depositors and £14,694 to their credit.

11. Expenditure on State Schools.—The net expenditure on State education during 1901 and for the five years ended 1912 is shewn below. The figures do not include expenditure on buildings, which is shewn separately in a subsequent table.

EXPENDITURE ON MAINTENANCE, STATE SCHOOLS, 1901 and 1908-12.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ...	623,734	656,907	256,245	152,006	89,694	37,710	...	1,816,296
1908 ...	934,603	692,410	299,227	152,950	164,456	60,407	...	2,304,053
1909 ...	940,534	726,020	309,704	164,863	166,103	73,532	...	2,380,756
1910 ...	979,775	788,246	323,372	177,827	172,470	74,907	...	2,516,597
1911 ...	1,048,584	834,276	351,942	198,979	187,301	84,317	629	2,706,028
1912 ...	1,285,410	893,649	393,543	217,874	220,780	86,500	674	3,098,430

The expenditure per head of average attendance for each of the years given above will be found in the succeeding table. As the figures shew, Western Australia has the highest average, followed by New South Wales and Victoria, the lowest rate being in Tasmania. The increase in the number of small schools was chiefly responsible for the growth of expenditure in the Western State in 1912, the expenditure on primary education alone shewing an increase of £23,000 as compared with the preceding year.

COST PER HEAD OF AVERAGE ATTENDANCE, STATE SCHOOLS, 1901 and 1908-12.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter.	C'wlth.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1901	4 0 10	4 7 0	3 12 9	3 9 5	5 9 3	2 12 11	...	4 0 8
1908	5 19 9	4 16 6	4 8 11	4 0 1	6 10 10	3 15 9	...	5 3 3
1909	5 17 6	4 19 5	4 8 0	4 6 2	6 4 6	4 4 7	...	5 3 11
1910	6 4 5	5 8 0	4 13 2	4 4 9	6 5 8	4 3 4	...	5 10 5
1911	6 10 5	5 13 11	5 0 5	5 12 10	6 7 2	4 13 0	10 9 7	5 16 8
1912	7 10 4	5 12 1	5 1 9	5 6 8	6 14 0	4 8 5	9 9 10	6 4 11

Expenditure on school buildings in each of the years quoted was as follows:—

EXPENDITURE ON STATE SCHOOL BUILDINGS, 1901 and 1908-12.

(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Qld.	S. Aust.	W. Aust.	Tasmania	Northern Territory.	C'wealth.
	£	£	£	£	£	£	£	£
1901 ...	57,663	36,040	33,421	13,656	49,073	7,762	...	197,615
1908 ...	146,715	106,983	44,333	22,726	34,299	8,659	...	363,715
1909 ...	149,767	162,932	57,349	31,512	31,099	8,442	...	441,101
1910 ...	191,188	118,556	50,668	44,025	47,637	16,957	...	469,031
1911 ...	176,194	117,048	53,953	35,581	58,406	16,548	...	457,730
1912 ...	287,522	167,657	67,637	40,855	73,920	9,423	2,117	649,131

The total net cost and the net cost per scholar in average attendance during the year 1912 were as follows:—

NET TOTAL COST, STATE SCHOOL EDUCATION, 1912.

(COMMONWEALTH.)

Item.	N.S.W.	Vic.	Q'land.	S. Aust.	W. A.	Tas.	N. T.	C'wealth.
Net cost of education, including buildings	£ 1,572,932	£ 1,061,306	£ 461,180	£ 258,729	£ 294,700	£ 95,923	£ 2,791	£ 3,747,561
Per scholar in average attendance	£9 3/11	£6 13/2	£5 19/2	£6 6/8	£8 18/10	£4 18/1	£39 6/2	£7 11/0

The average for the Commonwealth in 1901 was £4 9s. 3d. per scholar in average attendance.

§ 3. Private Schools.*

1. **School Teachers, etc., in 1912.**—The following table shews the number of Private Schools, together with the teachers engaged therein, and the enrolment and average attendance in 1912:—

PRIVATE SCHOOLS, 1912.

(COMMONWEALTH.)

State.	Schools.	Teachers.	Enrolment.	Average Attendance.
New South Wales	754	3,673	61,744	51,168
Victoria	548	1,856	56,035	45,000
Queensland	151	767	17,289	14,752
South Australia	174	681	12,031	9,430
Western Australia	118	427	10,000	8,506
Tasmania	116	360	6,933	5,041
Northern Territory	1	2	53	43
Commonwealth	1,862	7,766	164,085	133,940

The totals for New South Wales include returns from the Sydney Grammar School, which receives a yearly State subsidy of £1500, and which, in 1912, had an enrolment of 561, and an average attendance of 522.

The figures for Victoria are furnished by the Inspector of Registered Schools, and unfortunately refer to primary schools only. It is stated that the decrease is due to the closing of a number of the smaller and inefficient schools. Some of the secondary schools in the country towns have also closed, and their pupils and a portion of the teaching staff have been absorbed by the State Higher Elementary or District Schools.

The figures for Queensland include the returns from Grammar Schools, of which there are ten—six for boys and four for girls. These schools are governed by boards of trustees, partly nominated by Government, and partly by the subscribers to the funds. The trustees make regulations regarding the fees of scholars, the salaries of teachers, and generally for the management of the schools. Each school is endowed by the Government at the rate of £750 per annum, together with an additional £250 to provide district scholarships, of which five were allotted to each school from 1st January, 1911. During the year all the grammar schools were inspected by the departmental Inspector-General.

2. **Growth of Private Schools.**—The enrolment and average attendance at Private Schools during 1891, 1901 and in each year of the period 1907 to 1912 are as follows:—

* Private Schools include all schools not wholly under State control. The term "private," though popularly applied, is, of course, a misnomer.

ENROLMENT AND ATTENDANCE AT PRIVATE SCHOOLS, 1891 to 1912.

(COMMONWEALTH.)

Year	Enrolment.	Average Attendance.	Year.	Enrolment.	Average Attendance.
1891	124,485	99,588	1909	164,428	127,069
1901	148,659	120,742	1910	158,694	129,872
1907	152,037	122,878	1911	160,794	132,588
1908	152,399	125,530	1912	164,085	133,940

In view of the growth in population during the period covered by the table, the increase in enrolment and attendance does not afford room for much satisfaction. The returns will no doubt in future be to some extent adversely affected by the development of the Higher State Schools alluded to in a preceding paragraph.

3. Defects in Returns of Private Schools.—Until recent years the various State Governments had comparatively little control over privately conducted Schools. With the advance of modern educational thought the position is improving, but still leaves much to be desired. It is evident that without a thorough system of registration there will always be a difficulty in regard to enforcing the compulsory clauses of the various Education Acts. Moreover, advanced educational thought demands complete supervision, not only of curricula, but of all matters pertaining to school hygiene.

In New South Wales, under the provisions of the Bursary Endowment Act of 1912, 55 non-State Schools were inspected by the Departmental Inspector. It is pointed out by the inspector that the schools obtaining registration under this Act will gain an advantage over non-registered schools which will tend to increase their yearly capital value.

In Victoria, up to the year 1905, no attempt had been made to bring Private Schools under general administrative control, but the Registration of Teachers and Schools Act of 1906, and the Education Act of 1910, established a registration scheme under a special committee. At present, the committee consists of nine members of the Council of Education. Section 60 of the Act of 1910 also empowers the Minister of Education to authorise the inspection of any school (other than a State School) in order to ascertain whether the instruction given is satisfactory. The inspector of registered schools has on several occasions pointed out that there is a fair number of institutions which are very unsatisfactory, both as regards buildings and quality of instruction given therein.

In Queensland, with the exception of the Grammar Schools, which are now examined annually, there is practically no control over the Private Schools, beyond the fact that they may submit themselves to inspection if so desired, and there is apparently no provision in South Australia for any Government supervision over Private School affairs.

In Western Australia, non-Government schools must be declared efficient by the Education Department if attendance at them is to be recognised as fulfilling the requirements of the law, and the school registers must be open to the inspection of the compulsory officers of the Department.

In Tasmania the Education Act requires the teachers of other than State Schools "to furnish during January of each year returns shewing attendances at such schools." Despite the fact that penalties are prescribed for non-compliance with the law, nevertheless many teachers neglect to return the forms sent out. Provision has been made for registration of private teachers and schools very much on the lines adopted in Victoria. The Act declares that all persons who were employed in a *bona fide* manner for at least three months before 25th October, 1906, are entitled to be registered as teachers without submitting proof of professional qualifications. No person can be registered as a private teacher since July, 1907, unless the Board is satisfied as to his fitness for the work.

§ 4. Free Kindergartens.

The following information regarding Free Kindergartens in the Commonwealth has been compiled from particulars supplied by the principals of the chief institutions in each State, except in the case of Victoria, the details for this State being furnished by the Inspector of Registered Schools.

FREE KINDERGARTENS IN THE COMMONWEALTH, 1912.

State.	No. of Schools.	Teachers.	Average Attendance of Children.	Number of Teachers in Training.
New South Wales (Sydney) ...	8	35	450	42
(Newcastle) ...	3	4	120	4
Victoria (Melbourne) ...	17	219	678	38
(Ballarat) ...	1	12	26	...
Queensland (Brisbane) ...	4	4	98	6
South Australia (Adelaide) ...	5	6	300	18
Tasmania (Hobart) ...	1	4	35	3
(Launceston) ...	1	4	45	3
Total ...	40	288	1,752	114

The figures given in the column referring to teachers include in some instances voluntary helpers and student teachers as well as permanent instructors. In New South Wales the total includes twenty-five student teachers, while the Victorian returns are inclusive of one hundred and eighty-five voluntary helpers.

It must, of course, be distinctly understood that the information given above refers to Kindergartens under private management, and is exclusive of institutions controlled by the Education Departments of the various States.

§ 5. Universities.

1. **Origin and Development.**—The history of the foundation and progress of the four then existing Australian Universities was traced at some length in Year Books I. and II. In the present volume space will permit of only a very brief reference to the subject.

(i.) *University of Sydney.* The Act of Incorporation of the University of Sydney received Royal assent on the 1st October, 1850, and the first Senate was appointed on the 24th December of that year. The first matriculation examination was held in October, 1852, when twenty-four candidates passed the required test, and the formal inauguration ceremony took place on the 11th October of the same year. A Royal Charter was granted to the University on the 27th February, 1858. Women students were admitted in 1881. The passing of the University (Amendment) Act of 1912 marks an important epoch in the development of the educational system of New South Wales. The Act aims at placing the University in a more effective position as the culminating point in a thoroughly co-ordinated system of State education, and it is claimed that the passing of this measure makes the educational system—from the Primary Schools through the Secondary Schools to the Technical Colleges or to the University—form a progressive and continuous whole. Under the new Act the constitution of the Senate was radically changed, and this body now consists of—four Fellows appointed by the Governor, one

electd by members of the Legislative Council, one electd by members of the Legislative Assembly, five representatives of the University teaching staff, ten electd by graduates of the University, and three electd by the aforesaid Fellows. The professorial representatives hold office for two years, and the other Fellows for five years. In addition, it is provided that in view of their distinguished services, the present Chancellor, Sir Normand MacLaurin, and the Vice-Chancellor, Judge Backhouse, shall each during his life be a Fellow in addition to the ten Fellows electd by the graduates. The second part of the Act contains a feature of outstanding importance, in that it provides for the allotment of exhibitions in the proportion of 1 for every 500 of the population of New South Wales between the ages of 17 and 20, or in such other ratio as may be determined by Parliament. These exhibitions, which carry exemption from all fees, are not restricted to any particular faculty in the University, and are principally allotted in order of merit as shewn by examinations for leaving certificates at the State Schools. Pupils of registered Secondary Private Schools are also eligible for leaving certificates on the same conditions as those of the State Schools. To gain a leaving certificate a candidate must have satisfactorily completed an approved four years' course of study. Five per cent. of the total number of exhibitions allotted in any year are available for successful candidates at the written examination, even though they be ineligible for a leaving certificate. For the year 1912-13 the statutory endowment to the University has been increased from £10,000 to £20,000. At the inception of the University there were only three professorships. The present staff consists of twenty-one professors, eight assistant professors, and ninety-four lecturers and demonstrators. There are, in addition, seven honorary lecturers, various honorary demonstrators, as well as various miscellaneous assistants in laboratories and three curators of museums.

(ii.) *University of Melbourne.* This institution was established by Act of Parliament assented to on the 22nd January, 1853, and its first Council was appointed on the 11th April of that year. The foundation stone of the main building was laid on the 3rd July, 1854, and the University was formally inaugurated on the 13th April, 1855. By Royal Letters Patent, issued in 1859, its degrees are, like those of the Sydney institution, declared of equal status with those of any other University in the British Empire. Women students attended lectures for the first time in 1881. The University, which began in 1855 with Schools of Arts and Laws, has now a staff of eighteen professors, sixty-four lecturers and demonstrators, as well as fifty-seven miscellaneous assistants. The Conservatorium of Music has a staff numbering twenty-five.

(iii.) *University of Adelaide.* This University was established by Act of Parliament in 1874. Its origin and progress was largely due to the munificence of the late Sir Walter Watson Hughes and Sir Thomas Elder, G.C.M.G., the total gifts of the latter amounting to over £100,000. The academical work of the institution was commenced in March, 1876, when eight matriculated and fifty-two non-graduating students attended lectures. The foundation stone of the University buildings was laid on the 30th July, 1879, and the buildings were opened in April, 1882. In 1881, by Royal Letters Patent, the degrees granted by the institution were recognised as of equal distinction with those of any University in the British Empire. The Elder Conservatorium of Music was opened in 1898. Power was given by Act of Parliament in 1880 to grant degrees to women. At first there were only four professorships in the University, whereas the present staff consists of eleven professors, thirty lecturers and six assistant lecturers, exclusive of the staff at the Conservatorium, which numbers ten.

(iv.) *University of Tasmania.* The Act to establish the University of Tasmania (Hobart) was assented to on the 5th of December, 1889. At the present time, the institution, which is small but efficient, possesses a staff of four professors, four lecturers, and

two assistant lecturers and demonstrators. Under Statute dated 13th April, 1905, the Zeehan School of Mines and Metallurgy was affiliated to the University.

(v.) *University of Queensland.* The Act to establish the University of Queensland was passed in 1909, and the first Senate was appointed on the 14th April, 1910. The University was opened on the 14th March, 1911, when 60 students were matriculated. Provision has been made for a Correspondence Study department in connection with the institution. At the present time there are four professors, *i.e.*, one each of classics, chemistry, engineering, and for mathematics and physics, with a liberal complement of lecturers and demonstrators.

(vi.) *University of Western Australia.* The University Commission in this State has recommended the establishment of a University somewhat on the lines of those in the eastern States, but with such amendments as would bring it as far as possible into accord with the most modern requirements. The Act establishing a University was passed on the 18th February, 1911. In addition to lectureships, the institution has been opened with six professorships—modern literature and history, mathematics and physics, chemistry, engineering and mining, and geology—while a chair in agriculture has been endowed by the generosity of Dr. Hackett. The institution was opened in March, 1913.

2. **Teachers and Students of Universities.**—The following table shews the number of professors and lecturers and the students in attendance at each of the Commonwealth Universities during the year 1912:—

UNIVERSITIES.—TEACHERS AND STUDENTS, 1912.

University.	Professors.	Lecturers.	Students attending Lectures.		
			Matriculated.	Non-matriculated.	Total.
Sydney	29	101	1,107	388	1,495
Melbourne	18	64	...	...	1,221*
Adelaide	11	36	387	310	697†
Tasmania (Hobart) ...	4	6	79	51	130
Queensland (Brisbane)‡	4	17	205	14	219

* Exclusive of 98 music students. † Exclusive of 318 music students. ‡ Opened in 1911.

3. **University Revenues.**—The income of the Universities from all sources during the year 1912 was as follows:—

UNIVERSITIES.—REVENUE, 1912.

University.	Government Grants.	Fees.	Other.	Total.
	£	£	£	£
Sydney	43,000	20,590	26,850	90,440
Melbourne	37,404	31,793	7,532	76,729
Adelaide	27,004	10,296	6,445	43,745
Tasmania (Hobart) ...	5,000	1,454	732	7,186
Queensland (Brisbane) ...	12,500	2,331	3,888	18,719

The column "Other" includes the receipts from private foundations. The extent to which the Universities have benefited by private munificence will be apparent from the following table:—

PRINCIPAL PRIVATE BENEFACTIONS TO AUSTRALIAN UNIVERSITIES.

University of Sydney.		University of Melbourne.		University of Adelaide.	
Donor.	Amount.	Donor.	Amount.	Donor.	Amount.
	£		£		£
J. H. Challis ...	250,750	Sir Samuel Wilson	30,000	Sir Thos. Elder ...	98,760
Sir P. N. Russell...	100,000	James Stewart ...	25,624	Sir W. Hughes ...	20,000
Thos. Fisher ...	30,000	Hon. Francis Ormond	20,000	Hon. J. H. Angas	10,000
Edwin Dalton ...	8,000	John Hastie ...	19,140	R. Barr Smith ...	10,150
Hugh Dixon ...	7,050	Robert Dixon ...	10,837	Other donations ...	14,902
Hon. Sir W. Macleay	6,000	John Dixon Wy-			
Mrs. Hovell ...	6,000	selaskie ...	8,400		
Thos. Walker ...	6,200	David Kay ...	5,764		
Other donations ...	53,714	Henry Dwight ...	5,000		
		Wm. Thos. Mollison	5,000		
		Other donations ...	44,862		
Total	£ 467,714	Total	£ 174,627	Total	153,812

In addition to the sum of £6000 shewn above, the Hon. Sir W. Macleay also presented the Museum of Natural History to the University.

The credit balances of some of the above endowments now amount to very considerable sums. For example, on the 31st December, 1912, the Challis Fund amounted to nearly £310,000, and the Fisher bequest to over £41,000. The cash balance at the end of 1912 on account of all private foundations to Sydney University stood at £547,165. In the case of Melbourne University the Stewart fund on the 31st December, 1911, stood at £30,438, the Hastie at £19,238, the Dixon fund at £12,212, etc.

In addition to the above there were various other bequests to Sydney University—*e.g.*, collection of Egyptian antiquities, etc., by Sir Charles Nicholson, and Natural History collection by Mr. Geo. Masters, while the building for the Natural History Museum was given by Sir W. Macleay. Numerous prizes and scholarships have also been given to the various colleges. In Melbourne, the Hon. Francis Ormond's benefactions to Ormond College amounted to about £108,000. Private benefactions to the University of Tasmania and the newly-established University of Queensland amount to £3105 and £6846 respectively.

4. University Extension.—These lectures were instituted at Sydney University in 1886, but under a statute of the Senate, approved of in 1892, a Board was appointed, which was empowered from time to time to recommend to the Senate the names of suitable persons for giving courses of lectures, and to hold examinations in the subjects of the lectures. The Board receives and considers applications from country centres, and makes provision for engaging lecturers and managing the entire business connected with the various courses. The project has only met with fair success, no lectures having been given in some years, but lately there appears to be an awakening of interest in the matter. The Board also arranged for courses of lectures in Queensland, Victoria, and Western Australia. In 1912 the average attendance at extension lectures in New South Wales was 120.

University extension lectures in Victoria date from the year 1891, when a Board was appointed by the Melbourne University for the purpose of appointing lecturers and holding classes and examinations at such places and in such subjects as it might think fit. Interest in University extension has varied in Victoria, the attendance at the various centres numbering about 570 in 1911.

The Adelaide University has also instituted short courses of extension lectures in Arts and Science, to which students are admitted on payment of a nominal fee. Public intimation of these lectures is made from time to time during the session. For 1912 a course of nine lectures was provided. The University of Tasmania provides for courses of lectures at Launceston, which are delivered weekly by members of the University teaching staff.

As pointed out previously, a correspondence study department has been inaugurated in connection with the University of Queensland in order to overcome, as far as possible, the difficulties of students who desire to benefit by University teaching, but who for various reasons are unable to attend the lectures. At present the work of this department is confined to the Arts course.

(v.) *Workmen's Tutorial Classes.* Chiefly as the result of a visit to Australia in 1913 by Mr. Mansbridge, of the Workers' Educational Association of Britain, a movement has been inaugurated having for its object the bringing of the University into closer relationship with the masses of the people. In New South Wales a Workers' Educational Association has been formed, and already tutorial classes have been started in Economics. The University Council in Victoria has formulated a scheme, and it is proposed to ask for a State grant of £2500, of which £1250 is to be expended on tutorial classes. In Queensland, classes have been formed at Brisbane and Ipswich, and the movement is extending in the other States.

§ 6. Technical Education.

1. **General.**—Although provision has been made in some of the States in respect to many necessary branches of technical education, the total provision made would imply that this branch of education has not been regarded as of great importance. As will be seen later on, the expenditure on technical education for the whole of Australasia is comparatively insignificant. The question of apprenticeship is dealt with in the sections dealing with "Manufacturing Industries and Labour and Industrial Statistics."

2. **New South Wales.**—The present organisation of technical education in this State dates from the year 1883, when a Technical Education Board was appointed as a result of suggestions made at the Technological Conference held in 1879. This Board continued its functions till November, 1889, when it was dissolved, and the work has thenceforward been carried on as a branch of the Public Instruction Department. The chief centre of activity is, of course, in Sydney, where the Technical College and Technological Museum are situated, the college having been opened for the reception of students early in 1892. Colleges have also been erected in some of the chief country towns—at Maitland in 1890; Newcastle 1896; Bathurst 1898; Broken Hill 1898; Albury 1899; and Goulburn 1902. In other centres classes have been established in various subjects whenever the prospects are sufficiently encouraging. It is proposed to secure a greater degree of co-ordination of the Technical College with the other branches of State educational effort, and also with the technical side of the University. Up to the year 1912 the provision for technical education is stated to have partaken more or less of the nature of successive accretions on the original humble beginnings, rather than to have aimed at development in accordance with a definite plan. With the systematisation of the other branches of education, the necessity for more effective organisation of the technical side became imperative. It is stated that at present there is much wasted effort on account of the insufficient prior elementary training possessed by students taking up courses, and it is hoped that serviceable initial training will be provided in the newly established Trade and Continuation Schools. Provision has been made for Intermediate Technical Scholarships, entitling the holder to three years' free tuition at any of the organised day courses at the Technical College. These were eagerly competed for in 1912, and 10 with grant and 12 without grant were awarded.

The table below gives some idea of the development of technical education in New South Wales :—

TECHNICAL EDUCATION, NEW SOUTH WALES, 1908-12.

Year.	Number of Classes.	Number of Enrolments.	Average Weekly Attendance.	Number of Lecturers and Teachers.	Fees Received.
					£
1908	790	18,490	10,498	280	14,176
1909	864	21,242	12,265	292	15,475
1910	886	22,822	13,255	334	15,873
1911	875	23,621	15,074	329	16,395
1912	793	28,082	17,749	320	15,846

The enrolments in 1912 were distributed as follows :—

Sydney College Classes	...	...	...	17,359
Suburban Classes	...	...	...	2,599
Country Classes	...	...	...	6,511
				26,469
Classes at Public Schools	...	...	...	1,613
Total	...	...	...	28,082

Technical Day Schools have been established at the Central College in Sydney, and at Newcastle and Goulburn. The course of instruction covers two years, and is designed to prepare young students for admission to the Engineering, Mining, or Architecture classes at the College. Trade schools have been established at Balmain and Leichhardt. As mentioned elsewhere, higher technical training is afforded at the Schools of Mines and Engineering in connection with the University. References to the Agricultural Colleges will be found in the section dealing with Agriculture.

3. **Victoria.**—Technical instruction in mining has for many years received considerable attention in Victoria, the Ballarat School of Mines, which was established as far back as 1870, having achieved an Australasian reputation. The general scheme of instruction, however, lacked cohesion, and it was not until after the publication of the Report of the Royal Commission on Technical Education, which was appointed in 1899, that many defects were remedied. Prior to the passing of the Education Act of 1910, the Technical Schools were managed by local Councils, receiving grants from the Education Department. It is now proposed to place them directly under the control of the Department, and some of the smaller institutions have been transferred already, while the larger schools will be taken over as soon as the necessary arrangements can be made. It is hoped that the Agricultural and District High Schools will serve as an effective connecting link between the ordinary State Schools and the Technical Schools. At present there are 20 Technical Schools receiving State aid, and of these 3 afford instruction in Science, Art, and Trade subjects; 3 in Art and Science; 3 in Art and Trade; while 5 confine their teaching to Art, and 1 to Trade subjects. The largest technical institution in Melbourne is the Working Men's College, founded in 1887. The College, in addition to giving instruction in a large number of technical subjects, is also a School of Mines. Six of the schools, viz., the Working Men's College, and the Schools of Mines at Ballarat, Bendigo, Bairnsdale, Maryborough and Stawell are classed as Certified Science Schools and are open to receive State School exhibitioners. Science and Art classes have been established at some of the larger State Schools.

TECHNICAL EDUCATION, VICTORIA, 1912.

Year.					No. of Subjects Taught.	No. of Enrolments.	Fees Received.
							£
1908	...	...	...	...	68	6,012	10,883
1909	...	...	...	...	85	6,612	13,234
1910	...	...	...	...	83	7,107	13,631
1911	...	...	...	...	90	7,008	12,991
1912	...	...	...	...	101	7,923	11,664

The average attendance for Victoria is not available, but the number of individual students enrolled per term was given as 4440 for 1912.

4. **Queensland.**—The control of Technical Education in Queensland was removed from the hands of the local Committee in 1905, and vested in the Education Department. At present the Director is assisted in his administration by a Superintendent, and an Inspector of Technical Colleges. During 1912 there were 16 colleges in operation—Bowen, Bundaberg, Cairns, Central, Charters Towers, Gympie, Herberton, Ipswich, Mackay, Maryborough, Mount Morgan, Rockhampton, Sandgate, Toowoomba, Townsville, Warwick. The colleges at Warwick, Brisbane and Mackay are under the direct control of the Department, while the remainder are managed by Committees under departmental supervision. The progress of technical education since 1908 is shewn in the following table:—

TECHNICAL EDUCATION, QUEENSLAND, 1908-12.

Year.				Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
								£
1908	...	...	...	327	5,187	2,640	199	9,029
1909	...	...	...	349	5,608	3,128	214	8,605
1910	...	...	...	312	5,744	3,250	195	8,884
1911	...	...	...	381	7,089	5,567	219	10,349
1912	...	...	...	363	7,851	5,589	238	9,794

Greater attention is being devoted to the development of trade classes, and the Technical College authorities have been assisted by the University Professors in the preparation of a properly organised system of Trade instruction. The Department now pays about £2000 per annum to the Technical Colleges for the instruction of selected State School pupils in approved subjects. Tuition by correspondence is given by the Central Technical School. It is believed that the raising of the school age to 14 years, coupled with the establishment of High Schools, will result in a more effective co-ordination between ordinary and technical education in the State.

5. **South Australia.**—A considerable amount of attention has been given to technical education in South Australia, particularly in connection with the mining industry. The School of Mines and Industries in Adelaide was founded in 1889. There are in addition Schools of Mines at Moonta, Port Pirie, Kapunda, and Gawler. A School of Design, Painting, and Technical Arts has been established in Adelaide, with branches at Port Adelaide and Gawler. The conditions connected with the country Technical Schools, viewed from the standpoint of the Department of Education, are not considered satisfactory. While the Government bears the bulk of the cost of maintenance, the Minister for Education is not consulted in regard to the organisation, curriculum, or staffing of the schools. Although good work has been accomplished, the system of

control of Technical Schools by independent councils is declared by the Director of Education to be no longer suitable, and stress is laid on the necessity for co-ordinating technical effort under one central authority. The development since 1908 is shewn in the table hereunder:—

TECHNICAL EDUCATION, SOUTH AUSTRALIA, 1908-12.

Year.			Number of Classes.	Enrolments.	Average Weekly Attendance.	Number of Teachers.	Fees Received.
							£
1908	...	...	126	2,508	*	90	3,370
1909	...	...	204	4,179	*	88	3,574
1910	...	...	199	4,646	*	83	3,537
1911	...	...	185	4,456	*	91	3,547
1912	...	...	201	4,760	3,445	95	3,526

* Not available.

6. Western Australia.—A Technical School was established at Perth in 1900, and since its opening has progressed rapidly. Extensive additions to the buildings were made in 1909, and the remodelled institution was opened in 1910. There are branch institutions at Midland Junction, Fremantle, Claremont, Coolgardie, Kalgoorlie, Boulder, Murchison, Northam, Albany, Bunbury, Geraldton, Pingelly, Leonora, and Collie, while it is proposed to open classes at other centres as occasion demands. The schools are all under the control of the Education Department, the officer entrusted with their supervision being styled Director of Technical Education. The Director also supervises the School of Mines at Kalgoorlie, which is controlled by the Mines Department. Advanced work at present is taken only in Perth, Fremantle, Boulder, and in Kalgoorlie by the School of Mines, the other branches dealing almost entirely with preparatory work chiefly in Continuation Classes. At the Perth School the full course can now be taken for the B.Sc. degree of the University of Adelaide. It is hoped that in this way a nucleus will be formed for an efficient staff of Science teachers for the Education Department and the State University. Returns for the last five years are embodied in the table hereunder:—

TECHNICAL EDUCATION, WESTERN AUSTRALIA, 1908-12.

Year.			No. of Classes.	Enrolments.	No. of Teachers.	Fees Received.
						£
1908	...	...	135	1,337	73	2,836
1909	...	...	146	1,574	83	2,854
1910	...	...	142	2,007	122	3,683
1911	...	...	230	4,595	157	3,332
1912	...	...	304	5,090	163	3,144

Information regarding average weekly attendance is not available for Western Australia.

7. Tasmania.—In this State provision for technical education dates from the year 1888. At the present time the most important technical institution is the School of Mines and Metallurgy at Zeehan. Courses of instruction are given in metal mining and in metallurgical chemistry and assaying, the diploma in metal mining entitling the holder to the Government certificate of competency as a mine manager. The institution is affiliated to the University of Tasmania. There are also three other schools under the control of the Education Department, each managed by a committee appointed by the Governor-in-Council. Tasmanian Technical Schools naturally devote their chief attention to mining and mineralogy. Statistics for the last five years are given as follows:—

TECHNICAL EDUCATION, TASMANIA, 1908-12.

Year.	No. of Classes.	Enrolments.	Average weekly Attendance.	No. of Teachers.	Fees Received.
					£
1908 ...	29	680	171	29	619
1909 ...	67	794	248	32	647
1910 ...	49	614	267	33	681
1911 ...	54	833	295*	32	667
1912 ...	62	993	300*	36	768

* Estimated.

8. **Attendance at Commonwealth Technical Schools.**—The table hereunder shows the enrolment and attendance at Technical Schools and classes in the Commonwealth during 1912:—

ENROLMENT AND ATTENDANCE AT TECHNICAL SCHOOLS, 1912.
(COMMONWEALTH.)

State	Enrolment	Average Attendance	Technical Classes at State Schools.	
			Enrolment	Av. Attend.
New South Wales ...	28,082	17,749	1,613	545
Victoria ...	7,923	†3,500	79	...
Queensland ...	7,851	5,589	...	†1,597
South Australia ...	4,760	3,445	262	...
Western Australia ...	5,090	*	...	...
Tasmania ...	993	300	...	...

* Not available. † Estimate. ‡ Free—Pupils from State Schools.

9. **Expenditure on Technical Education.**—The expenditure on technical education in each State during the period 1908 to 1912 is shown below:—

EXPENDITURE ON TECHNICAL EDUCATION, 1908-12.
(COMMONWEALTH.)

Year.	N.S.W.	Victoria.	Queensland.	South Aust.	West. Aust.	Tasmania.	C'wealth.
	£	£	£	£	£	£	£
1908 ...	51,814	26,839	10,720	7,856	9,264	2,215	108,708
1909 ...	61,452	27,039	13,589	12,742	9,422	3,209	127,453
1910 ...	71,002	32,217	20,612	13,476	9,987	3,055	150,349
1911 ...	77,160	41,030	34,611	18,017	14,590	3,726	184,134
1912 ...	99,265	42,541	44,073	13,906	27,536	3,318	230,639

The figures in the preceding table represent an expenditure of about 11d. per head of the population of the Commonwealth, as compared with 13s. 4d. per head spent on maintenance for primary education, and clearly shew that technical education has not attained its proper place in the educational organisation of Australia. Expenditure on buildings, included in the foregoing totals, comprises £10,393 in New South Wales, £13,605 in Victoria; £18,697 in Queensland, and £12,144 in Western Australia.

§ 7. Business Colleges and Shorthand Schools.

There has been considerable development in recent years both in the number and scope of privately conducted institutions, which aim at giving instruction in business methods, shorthand, typewriting, the use of calculating machines, etc. Particulars for those States where the information is available are given in the table hereunder:—

BUSINESS COLLEGES AND SHORTHAND SCHOOLS, Etc., 1912.

State.	Schools.	Teachers.	Students Enrolled.		Aver. Attendances.		Fees Recd.
			Males.	Females.	Males.	Females.	
New South Wales ...	18	103	3,280	5,231	1,321	2,134	£ 22,743
Victoria* ...	...	...	...	...	...	...	...
Queensland† ...	...	...	...	...	...	...	...
South Australia ...	4	38	911	746	453	369	8,488
Western Australia ...	4	25	363	594	229	343	3,619
Tasmania ...	3	9	77	159	23	52	862

* Not available. † Included in Private Schools.

The figures for average attendance shew a predominance of woman students in all States, except South Australia, the excess being due to the increasing number of girls finding employment as stenographers, and in clerical and accountancy work.

§ 8. Diffusion of Education.

1. **General Education.**—A rough indication of the state of education of the people is obtained at each Census under the three headings, "read and write," "read only," and "cannot read." The grouping of the whole population, exclusive of aborigines, in these three divisions is given for each Census since 1861:—

EDUCATION AT CENSUS PERIODS, 1861 to 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. <i>a</i> { Read & write	188,543	296,741	507,067	835,562	1,071,935	1,379,631
{ Read only...	46,024	56,391	49,372	43,539	29,728	6,442
{ Cannot read	116,293	149,866	193,386	244,853	253,183	260,661
Vic. ... { Read & write	328,362	478,464	653,346	908,490	998,010	1,186,289
{ Read only...	57,351	70,953	47,950	32,794	21,852	4,680
{ Cannot read	152,915	180,781	160,270	198,556	181,208	174,632
Q'nsland { Read & write	17,152	74,940	136,436	276,381	376,294	508,703
{ Read only...	3,680	12,080	13,657	14,618	11,737	3,416
{ Cannot read	9,227	33,084	63,432	102,719	110,098	93,694
S. A. <i>(b)</i> { Read & write	72,190	117,349	200,057	236,514	290,748	344,095
{ Read only...	18,535	21,509	15,267	9,571	8,283	1,785
{ Cannot read	36,105	46,768	64,541	74,346	64,126	62,678
W. Aus. { Read & write	7,683	14,166	19,684	34,254	150,099	237,629
{ Read only...	1,301	2,717	2,430	2,061	3,107	917
{ Cannot read	5,853	7,902	7,594	13,467	30,918	43,568
Tas. ... { Read & write	48,282	55,941	74,966	103,138	133,579	155,295
{ Read only...	13,136	13,946	9,606	6,287	3,907	918
{ Cannot read	28,559	29,441	31,133	37,242	34,989	34,998
North'n { Read & write	...	...	...	...	...	2,397
T'rt'y <i>(c)</i> { Read only...	...	...	...	...	...	34
{ Cannot read	...	...	...	...	...	879
Federal { Read & write	...	...	...	...	...	1,424
T'rt'y <i>(d)</i> { Read only	...	...	...	...	...	14
{ Cannot read	...	...	...	...	...	276
C'mw'lth { Read & write	662,212	1,037,601	1,591,556	2,394,339	3,020,665	3,765,463
{ Read only...	140,027	177,596	138,282	108,870	78,614	18,156
{ Cannot read	348,952	447,842	520,356	671,183	674,522	671,386

(a) Including Federal Territory prior to 1911.
(c) Included in South Australia prior to 1911.

(b) Including Northern Territory prior to 1911.
(d) Included in New South Wales prior to 1911.

The proportion in the Commonwealth of the various classes per 10,000 of the population is shewn below for each Census period:—

PROPORTION OF EDUCATION AND ILLITERATE PER 10,000 PERSONS,

1861 to 1911.

(COMMONWEALTH.)

Division.	1861.	1871.	1881.	1891.	1901	1911.
Read and write ...	5,752	6,239	7,073	7,543	8,004	8,452
Read only ...	1,217	1,068	615	343	208	41
Cannot read...	3,031	2,693	2,312	2,114	1,788	1,507

2. Education of Children.—The figures in the preceding tables refer to the entire population of the Commonwealth, and as the age constitution of those dwelling in the various portions of Australia underwent considerable modifications during the period dealt with, a far more reliable test of the diffusion of education will be obtained by a comparison of the Census returns in regard to children of school age. For comparative purposes this has been taken to include all children in the group over five and under fifteen years of age, and the degree of education of these at each Census will be found below:—

EDUCATION OF CHILDREN AT CENSUS PERIODS, 1861 to 1911.

(COMMONWEALTH.)

State or Territory.	1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. {						
Read & write	34,040	68,776	121,735	196,240	251,187	291,450
Read only ...	20,345	26,886	25,100	21,375	15,934	993
(a) Cannot read	25,472	32,924	41,663	48,580	60,734	34,793
Victoria {						
Read & write	42,268	122,739	170,713	201,199	236,515	287,028
Read only ...	25,518	39,636	25,249	15,656	13,128	410
Cannot read	19,341	29,490	21,421	27,441	27,765	19,621
Q'land... {						
Read & write	2,156	12,698	33,317	62,402	95,635	117,347
Read only ...	1,534	6,104	7,019	7,580	5,955	616
Cannot read	1,629	6,015	9,615	16,257	18,827	8,693
S. A. (b) {						
Read & write	15,485	30,608	46,630	58,291	69,451	69,878
Read only ...	8,748	12,432	7,926	4,618	4,229	248
Cannot read	6,907	10,074	12,483	17,988	15,480	9,638
W. Aus. {						
Read & write	1,333	3,218	4,418	6,910	25,326	47,568
Read only ...	226	617	1,260	933	1,815	159
Cannot read	1,015	1,795	1,593	2,348	5,431	5,234
Tas. ... {						
Read & write	11,919	17,335	17,188	24,007	32,890	36,351
Read only ...	2,848	4,143	4,108	2,974	1,795	186
Cannot read	4,581	6,663	6,606	8,829	8,475	5,575
N. T. (c) {						
Read & write	...	...	...	...	...	195
Read only...	...	...	...	...	...	...
Cannot read	...	...	...	...	...	118
Federal {						
Read & write	...	...	...	...	...	322
Read only...	...	...	...	...	...	2
Ter. (d) {						
Cannot read	...	...	...	...	...	47
C'wealth {						
Read & write	107,201	255,374	394,001	549,049	711,004	800,139
Read only ...	59,219	89,818	70,662	53,136	42,856	2,614
Cannot read	58,945	86,961	93,381	121,443	136,712	83,659

(a) Including Federal Territory prior to 1911. (b) Including Northern Territory prior to 1911. (c) Included in South Australia prior to 1911. (d) Included in New South Wales prior to 1911.

In the case of Tasmania full details for the years 1861 and 1871 are not available, and the figures for those years are approximate. The variation in degree of education will be more readily seen by reducing the foregoing figures to the basis of proportion per 10,000, and the results so obtained are embodied in the following table, a glance at which is sufficient to demonstrate the remarkable strides that at least the lower branches of education have made since 1861. In that year, only 47 per cent. of the children of school age could read and write, while 26 per cent. were illiterate. The returns for 1911 shew that the proportion of those who could read and write had increased to over 90 per cent., while the totally ignorant had declined by nearly two-thirds.

**EDUCATION OF CHILDREN (AGES 5 to 14) PER 10,000 AT CENSUS PERIODS,
1861 to 1911.**

(COMMONWEALTH.)

State or Territory.		1861.	1871.	1881.	1891.	1901.	1911.
N.S.W. (a)	Read & write	4,263	5,349	6,458	7,372	7,662	8,907
	Read only...	2,547	2,091	1,332	803	486	30
	Cannot read	3,190	2,560	2,210	1,825	1,852	1,063
Victoria ...	Read & write	4,851	6,397	7,853	8,236	8,526	9,221
	Read only...	2,929	2,066	1,162	641	473	16
	Cannot read	2,220	1,537	985	1,123	1,001	763
Que'n'land	Read & write	4,053	5,116	6,670	7,236	7,942	9,269
	Read only...	2,884	2,460	1,405	879	495	49
	Cannot read	3,063	2,424	1,925	1,885	1,563	682
S. Aus. (b)	Read & write	4,973	5,763	6,956	7,206	7,790	8,761
	Read only...	2,809	2,341	1,182	571	474	31
	Cannot read	2,218	1,896	1,862	2,223	1,736	1,208
W. Aus. ...	Read & write	5,179	5,716	6,076	6,780	7,775	8,982
	Read only...	878	1,096	1,733	916	557	30
	Cannot read	3,943	3,188	2,191	2,304	1,668	988
Tasmania	Read & write	6,160	6,160	6,160	6,704	7,620	8,632
	Read only...	1,472	1,472	1,472	830	416	44
	Cannot read	2,368	2,368	2,368	2,466	1,964	1,324
Northern Territ'y (c)	Read & write	...	...	...	...	...	6,230
	Read only...	...	...	...	...	...	...
	Cannot read	...	...	...	...	...	3,770
Federal Territ'y (d)	Read & write	...	...	...	...	...	9,868
	Read only ..	...	...	...	...	...	5
	Cannot read	...	...	...	...	...	127
Com'w'lth							
	Read & write	4,757	5,910	7,061	7,588	7,984	9,027
	Read only...	2,628	2,078	1,266	734	481	29
	Cannot read	2,615	2,012	1,673	1,678	1,535	944

(a), (b), (c), (d), see notes to preceding table.

3. Education as shewn by Marriage Registers.—Another common method of testing the spread of education is to compare the number of mark signatures with the total number of persons married during each year of a series. The percentage of males and females signing with a mark to the total persons married in the Census years 1861 to 1901, and during each of the last seven years, was as follows. The figures refer to marriages in the Commonwealth in respect of which information was obtainable.

ILLITERACY AS SHEWN BY MARRIAGE SIGNATURES, 1861 to 1912.
(COMMONWEALTH.)

Year.	Proportion Signing with Marks of Total Persons Married.						
	Males.	Females.	Total.	Year.	Males.	Females.	Total.
	per cent.	per cent.	per cent.		per cent	per cent	per cent.
1861	18.50	30.69	24.60	1907	0.81	0.70	0.76
1871	10.58	16.40	13.49	1908	0.71	0.73	0.72
1881	4.34	6.78	5.56	1909	0.65	0.62	0.64
1891	2.27	2.40	2.34	1910	0.56	0.59	0.58
1901	1.35	1.29	1.32	1911	0.56	0.54	0.55
1906	0.92	0.86	0.89	1912	0.43	0.45	0.44

The table shews that there has been a large diminution in illiteracy, and judging from the figures for the last few years the proportion bids fair to practically disappear. Up to 1891 there was a higher proportion of illiteracy amongst females, but from 1910 onwards, generally speaking, the opposite condition prevailed.

§ 9. Miscellaneous.

1. **Scientific Societies.**—(a) *Royal Societies.* Despite the trials and struggles incidental to the earlier years of the history of Australia, higher education and scientific advancement were not lost sight of. Thus the origin of the Royal Society of New South Wales dates as far back as 1821, when it was founded under the name of the Philosophical Society of Australasia, Sir Thomas Brisbane being its first president. Scientific work was fitfully carried on by means of a society whose name varied as the years rolled on. It was called the Australian Philosophical Society in 1850. In 1856 the old Australian Society merged into a resuscitated Philosophical Society of New South Wales, and its papers were published up to 1859 in the Sydney Magazine of Science and Art (2 vols. 1858-9). Its present title dates from 1866. Some of the papers of the old Philosophical Society were published in 1825 under the title of "Geographical Memoirs of New South Wales" (Barron Field), and contain much that is interesting in regard to the early history of Australia. One volume containing the Transactions of the Philosophical Society of New South Wales (1862-65) was published in 1866. The journal of the Society did not begin to bear a serial number, however (vol. 1), until the year 1867. "Transactions of the Royal Society of New South Wales" was issued in 1867, the title of the series being altered to "Journal" in 1876. Up to the end of 1912 forty-six volumes had been published. The exchange list comprises the names of 372 kindred societies. At the present time the library contains about 21,000 volumes and pamphlets, valued at over £7500. Income and expenditure for the year ended 31st March, 1913, were £1397 (Government grant £400) and £1740 respectively. The Society had on the same date 318 members.

The Royal Society of Victoria dates from 1854, in which year the Victorian Institute for the Advancement of Science and the Philosophical Society of Victoria were founded. These were amalgamated in the following year under the title of the Philosophical Institute of Victoria, whilst the society received its present title in 1860. The first volume of its publications dates from 1855. The earlier publications dealt largely with Physics, later on Biology became prominent, while at present a large number of papers deal with Geology. Up to 1912 fifty-six volumes of publications had been issued. The Society exchanges with 326 kindred bodies. The constitution of the society states that it was founded "for the promotion of art, literature, and science," but for many years past science has monopolised its energies. The library contains about 10,000 volumes. Income for the year 1912 amounted to £488, including Government grant £200, members' fees £221, other £67. The total expenditure was £432.

The inaugural meeting of the Royal Society of Queensland was held on the 8th January, 1884, under the presidency of the late Sir A. C. Gregory. The society was formed "for the furtherance of the natural and applied sciences, especially by means of

original research." Shortly after its formation it received an addition to its ranks by the amalgamation with it of the Queensland Philosophical Society, which was started at the time when Queensland became a separate colony. At latest date the members numbered 127; publications issued, 24 volumes; library, 3800 volumes; societies on exchange list, 145.

The present Royal Society of South Australia grew out of the Adelaide Philosophical Society, which was founded in 1853, its object being the discussion of all subjects connected with science, literature and art. Despite this programme, the tendency of the papers was distinctly scientific, or of a practical or industrial nature. With the advent of the late Professor Tate the society became purely scientific. Permission to assume the title of "Royal" was obtained in 1879, the society thenceforward being known as "The Royal Society of South Australia." In 1903 the society was incorporated. In 1912 the number of members was 91. The income for the year 1912 was £463, including £226 Government subsidy, and expenditure £339. Up to 1912 the society had issued thirty-six volumes of proceedings and six parts of memoirs, exclusive of several individual papers published in earlier years. The exchange list numbers about 253.

The Royal Society of Tasmania (the first Royal Society outside the United Kingdom) was founded by Sir Eardley Wilmot, Lieutenant-Governor of Van Diemen's Land, on the 14th October, 1843. A large portion of the Colonial Gardens, together with a grant of £400, was given to the Society. A library and museum were established in 1848. In 1885 the museum and gardens were given back to the State, the Society being granted room in the Museum for its library and meetings. The names of Captains Ross and Crozier, of H.M.S. *Erebus* and *Terror*, appear in the list of the first corresponding members. The society, which, since 1844, has published annual volumes of proceedings, possesses 170 members, 15 corresponding members, exchanges with 140 kindred bodies, and has a library containing 10,000 volumes in addition to manuscripts, etc. Income for the year 1913 was £215, of which £178 came from members' fees.

(b) *Other Scientific Societies.* The Australasian Association for the Advancement of Science, founded in 1888, has its headquarters in Sydney. It meets usually in each State biennially in turn. Its receipts to date were about £13,000, including Government aid to the amount of £4000. The library contains 4000 volumes, valued at £400. Up to date, thirteen volumes of proceedings have been issued. The exchange list numbers 250. The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1875, and possesses a library of 10,000 volumes, valued at £6000. Up to date, thirty-seven volumes of proceedings have been issued. Exchanges number 188. This Society maintains three investigators engaged in research work (four for part of the year), and owes its development almost entirely to the benefactions of Sir William Macleay. The number of ordinary members at the end of 1912 was 168. Income for the year came to £1028, and expenditure to £976. The special revenue for research purposes only was £2045, and the expenditure £1491. The British Astronomical Association has a branch in Sydney, and in some of the States the British Medical Association has branches.

The principal scientific society in Western Australia is the Natural History and Science Society of Western Australia. This society has grown out of the Mueller Botanic Society, founded in July, 1897. The objects of the society are the study of natural history and pure science, promoted by periodical meetings and field excursions, the maintenance of a library, and the issue of reports of proceedings. It numbers at present 118 members, whose subscriptions form its main source of revenue. Government aid in the past has ranged from £7 to £75 per annum, the subsidy paid in 1912 being £25. Since its establishment the society has issued twenty journals of proceedings. Its publications are exchanged with 41 institutions at home and abroad.

In addition to the societies enumerated above, there are various others in each State devoted to branches of scientific investigation, particulars respecting which are not at present available.

2. **Libraries.**—As far as can be ascertained the total number of libraries in the Commonwealth at the latest available date was about 1500, and the number of books contained therein is estimated at nearly three millions. In each of the capital cities there is a well-equipped Public Library, the institutions in Melbourne and Sydney especially comparing very favourably with similar institutions in other parts of the world. The following statement gives the number of volumes in the Public Library of each city:—

METROPOLITAN PUBLIC LIBRARIES.

City.	Number of Volumes in—			Total.
	Reference Branch.	Ordinary Lending Branch.	Country Lending Branch.	
Sydney ...	237,481	*	12,902	250,383
Melbourne ...	215,763	30,913	...	246,676
Brisbane ...	37,521	...	...	37,521
Adelaide ...	77,328	28,444	...	105,772
Perth ...	90,982	9,109	...	100,091
Hobart ...	19,000	...	...	19,000

* The maintenance and control of the lending branch of the Public Library at Sydney were transferred in 1908 to the Municipal Council. At the end of December, 1912, the books numbered 29,000.

The Mitchell Library in Sydney consists of over 60,000 volumes and pamphlets, principally relating to Australasia, bequeathed in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. The testator stipulated that the regulations of the British Museum were to be adopted as far as practicable, hence the library is the resort of specialists.

The Launceston Mechanics' Institute in Tasmania possesses a library of 27,000 volumes.

The number of libraries in receipt of State or municipal aid, together with the estimated number of books contained therein, is given below for each State:—

SUBSIDISED LIBRARIES AND BOOKS THEREIN.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N. Terr.
Number of libraries ...	469	525	203	208	237	31	2
Estimated number of books ...	969,000	1,109,000	304,000	486,000	214,000	103,000	2,700

The figures in the above table can be taken only as approximations, as in many instances returns were not received from various institutions. The return for New South Wales includes the Public Library and the Sydney Municipal Library. Amongst other important libraries not included, may be enumerated those at the Sydney University and the Australian Museum, which contain 100,000 and 20,000 volumes respectively. There are also 2227 libraries, with an estimated total of 320,000 volumes, attached to State Schools.

3. **Museums.**—The Australian Museum in Sydney, founded in 1836, is the oldest institution of its kind in Australia. In addition to possessing a fine collection of the usual objects to be met with in kindred institutions, the Museum contains a very valuable and complete set of specimens of Australian fauna. The cost of construction of the building was £79,000. The number of visitors to the institution in 1912 was 222,000, and the average attendance on week-days 608, and on Sundays 1167. The expenditure for 1912 amounted to £11,836. A valuable library containing over 18,000 volumes

is attached to the Museum. Representative collections, illustrative of the natural wealth of the country, are to be found in the Agricultural and Forestry Museum, and the Mining and Geological Museum. The latter institution prepares collections of specimens to be used as teaching aids in country schools. The "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, and the Museum of Normal and Morbid Anatomy, connected with the University, and the National Herbarium and Botanical Museum at the Sydney Botanic Gardens, are also accessible to the public. There is a fine Technological Museum in Sydney, with branches in six country centres, the metropolitan institution containing over 109,000 specimens. Valuable research work has been undertaken by the scientific staff in connection with oil and other products of the eucalyptus. The number of visitors at the Technological Museums during 1912 was about 215,000.

The National Museum at Melbourne, devoted to Natural History, Geology, and Ethnology, is located in the Public Library building. The expenditure for specimens, furniture, etc., in 1912 was £500, and salaries and wages £2431. The Industrial and Technological Museum, opened in 1870, contains upwards of 55,000 specimens. There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens. Well equipped museums of mining and geological specimens are established in connection with the Schools of Mines in the chief mining districts.

The Queensland Museum dates from the year 1871, but the present building was opened in January, 1901. Since its inauguration the Government has expended on the institution a sum of £77,407, of which buildings absorbed £18,117, purchases £24,096, and salaries £35,194. The number of visitors during the year was 77,538, of whom 30,370 visited the institution on Sundays. The Queensland Geological Survey Museum has branches in Townsville, opened in 1886, and Brisbane, opened in 1892.

Under the Public Library Act of 1884 the South Australian Institute ceased to exist, and the books contained therein were divided amongst the Museum, Public Library, and Art Gallery of South Australia, and the Adelaide Circulating Library. The Museum was attended by 80,000 visitors in 1912.

The latest available returns shew that the Western Australian Museum contains altogether 53,000 specimens, of an estimated value of £66,000. The Museum is housed in the same building as the Art Gallery, and the visitors to the combined institutions during the year reached 54,000 on week days and 17,000 on Sundays. The expenditure totalled £3781, of which salaries absorbed £2204.

There are two museums in Tasmania—The Tasmanian Museum at Hobart, and the Victoria Museum and Art Gallery at Launceston, both of which contain valuable collections of botanical and mineral products. The Tasmanian Museum received aid from the Government during last year to the extent of £500.

4. Art Galleries.—Information regarding the State collections of objects of art in the various capitals is in some cases very meagre, while the method of presentation does not admit of any detailed comparisons being made. The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871. The contents, which are valued at £140,000, comprise 393 oil paintings, 381 water colours, 526 black and white, 160 statuary and bronzes, and 368 ceramics, works in metal and miscellaneous. During 1912 the average attendance on week days was 620, and on Sundays 2247. The expenditure in 1911 amounted to £5852.

The National Gallery at Melbourne at the end of 1912 contained 545 oil paintings, 3583 objects of statuary, bronzes and ceramics, and 13,926 water-colour drawings, engravings, and photographs. The Gallery is situated in the same building as the Museum and Public Library, the total cost of construction being £291,000. At the end of 1912 the Ballarat Art Gallery contained 219 oil paintings, and 165 water colours, etc., while there are some valuable works of art in the smaller galleries at Bendigo, Geelong, and Warrnambool.

The Art Gallery at Adelaide dates from 1880, when the Government expended £2000 in the purchase of pictures, which were exhibited in the Public Library building in 1882. The liberality of private citizens caused the Gallery to rapidly outgrow the accommodation provided for it in 1889, at the Exhibition Building, and on the receipt of a bequest of £25,000 from the late Sir T. Elder, the Government erected the present building, which was opened in April, 1900. The Gallery also received a bequest of £16,500 in 1903 from the estate of Dr. Morgan Thomas, and of £3000 in 1907 from Mr. David Murray. At the latest available date there were in the Gallery 220 oil paintings, 131 water colours, 164 black and white, 142 engravings and etchings, 22 statuary, and 651 miscellaneous works in metal, etc., the whole being valued at upwards of £47,000. Building and site are valued at upwards of £31,000. Visitors during the year 1912 numbered 97,973.

The foundation stone of the present Art Gallery at Perth in Western Australia was laid in 1901, the building and site being valued at £60,000. The collection comprises 97 oil paintings, 41 water colours, 217 engravings and black and white, 262 statuary, and miscellaneous metal works, etc., of a total value of £15,000.

In Tasmania the Art Gallery at Hobart was opened in 1887. Its present contents consist of 96 paintings and 81 etchings and black and white drawings. Buildings and site are valued at £30,000. The number of visitors during the year on week days totals 60,000.

The Art Gallery at Launceston was erected in 1888 at a cost of £5000, and opened on the 2nd April, 1891. Only a small proportion of the contents belong to the Gallery, the bulk of the pictures being obtained on loan. At latest date there were on view 80 oil paintings and 44 water colours valued at £5000. The total value of buildings and site is estimated at £12,100. The annual attendance is 33,000, and for Sundays 16,000.

5. State Expenditure on all Forms of Educational Effort.—The expenditure from the Consolidated Revenue in each State and Territory on all forms of educational and scientific activity during each of the last five financial years was as follows:—

EXPENDITURE ON EDUCATION, SCIENCE, AND ART, 1908-9 to 1912-13.

State or Territory.		1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
		£	£	£	£	£
New South Wales	Total	£ 1,104,077	1,149,422	1,221,175	1,416,015	1,609,734
	Per head	13.9	13 11	14 11	16 11	18 6
Victoria ...	Total	£ 925,368	953,499	1,003,251	1,142,399	1,122,854
	Per head	14/5	14/7	15/8	16/9	16/7
Queensland ...	Total	£ 423,080	510,388	503,021	535,082	622,238
	Per head	14/11	17/4	17 -	17 2	19/8
South Australia...	Total	£ 238,376	231,584	275,671	298,610	323,787
	Per head	11 7	11 1	13 9	14 3	15 4
Western Australia	Total	£ 221,377	222,861	251,071	298,530	319,723
	Per head	16,4	16/-	18,6	20,3	21,3
Tasmania ...	Total	£ 81,182	87,603	92,036	95,352	101,008
	Per head	8/10	9/7	9/8	9/11	10/6
Northern Territ'y	Total	£ ...	...	...	1,477	2,516
	Per head	...	...	...	9/1	15/
Commonwealth		Total £ 2,993,460	3,155,357	3,346,225	3,787,465	4,101,860
		Per head 13/10	14/3	15/4	16/7	17/8

The comparatively heavy increase in Queensland for 1909-10 and subsequent years is due to the inclusion of expenditure in connection with the University.

SECTION XXIII.

PUBLIC JUSTICE.

§ 1. Police.

1. Introductory.—In previous issues of the Year Book a résumé was given of the evolution of the police force in Australia up to the passing of the Police Act of 1862 (25 Vic. No. 16) in New South Wales, but considerations of space preclude its inclusion in the present volume.

In general terms the police forces of Australia may be said to be satisfactory both in regard to physique and intelligence, while as regards methods of prevention and detection of crime it is believed that the system in vogue here compares very favourably with those of the older-settled countries of the world.

2. Strength of Police Force.—The strength of the police force in each State during the five years ended 1912 was as follows. It may be mentioned that the police forces are entirely under State control, but, by arrangement, the Commonwealth Government utilises their services in various directions, such as the collection of Commonwealth electoral rolls, etc.

POLICE FORCES IN THE COMMONWEALTH, 1908 to 1912.

State.	Area of State in Sq. Miles.	1908.	1909.	1910.	1911.	1912.
New South Wales	310,372	2,417	2,435	2,447	2,487	2,554
Victoria...	87,884	1,552	1,598	1,605	1,640	1,662
Queensland	670,500	960	966	957	1,011	1,084
South Australia	380,070	429	442	465	502	522
Western Australia	975,920	492	475	474	481	487
Tasmania	26,215	232	234	234	232	237
Northern Territory	523,620	...	...	...	22	25
Commonwealth	2,974,581	6,082	6,150	6,182	6,375	6,571

The figures for New South Wales for 1912 are exclusive of fifty-six "black trackers," i.e., natives employed in detection of offenders in outlying districts, and five female searchers. In Queensland there were ninety-nine native trackers. The South Australian returns for 1912 are exclusive of eleven "black trackers" and one female searcher. The Northern Territory had twenty-three "black trackers" in 1912. There are also fifty-three "black trackers" in Western Australia and three female searchers not included in the table.

(i.) *Average Number of Inhabitants to each Police Officer.* The average number of inhabitants to each officer in each State during the same period is as follows. In considering these figures allowance must, of course, be made for the unequal area and unequal distribution of the population of the various States.

INHABITANTS TO EACH POLICE OFFICER, 1908 to 1912.
(COMMONWEALTH.)

State.	No. of Persons per Sq. Mile, 1911 Census.	Inhabitants to each Police Officer.				
		1908.	1909.	1910.	1911.	1912.
New South Wales ...	5.31	659	659	667	664	680
Victoria ...	14.97	819	804	799	810	816
Queensland ...	0.90	575	585	622	608	582
South Australia ...	0.46	949	900	863	819	808
Western Australia ...	0.29	543	571	572	596	619
Tasmania ...	7.29	801	787	816	820	809
Northern Territory ...	...	...	...	...	151	134
Commonwealth ...	1.50	703	703	707	704	707

The above figures naturally shew a great disparity in the relative numbers of the population protected by each police officer in the various States, and also in the relative area of territory to each officer. Western Australia and South Australia exhibit the largest figures in the latter respect, this, of course, being due to the fact that extensive areas in each State are as yet unpeopled by white settlers.

3. Duties of the Police.—In addition to the ordinary employment attaching to their office, the police are called upon to perform many duties which in other countries are carried out by various functionaries. Thus, in Queensland, according to the Commissioner's report for 1912, no less than fifty subsidiary offices are held by the police. As far as the statistician is concerned, it is found that the expert local knowledge possessed by the police renders their services in the collection of such returns as those relating to the agricultural, pastoral, and manufacturing industries, private schools, etc., more than ordinarily valuable. Then, again, the fact that their services are enlisted by such widely different departments as those dealing with mines, stock, agriculture, elections, registrations of births, deaths, and marriages, forestry, fisheries, explosives, old-age pensions, lunacy, public works, labour, etc., greatly enhances their general alertness by widening the range of their experience. Occasionally the objection is heard in some quarters that these special tasks involve some degree of sacrifice of ordinary routine duties, but that the general intelligence of the Australian police is adequate to the obligation to perform these tasks, besides being most creditable, results in a great saving of the public money.

4. Cost of Police Forces.—The expenditure from Consolidated Revenue on the police forces in each State during the five years 1908 to 1912 is shewn in the following table. Cost of buildings has been excluded from the return.

COST OF POLICE FORCES IN THE COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£
New South Wales ...	466,994	472,718	504,146	515,569	578,767
Victoria ...	306,263	320,831	337,670	345,889	348,227
Queensland ...	207,043	220,344	244,945	258,538	306,431
South Australia ...	96,979	98,214	96,769	107,872	116,847
Western Australia ...	124,518	119,111	120,420	127,458	129,556
Tasmania ...	39,105	39,740	40,408	41,535	43,236
Northern Territory ...	...	...	...	9,708	10,609
Commonwealth ...	1,240,902	1,270,958	1,344,358	1,406,569	1,533,673

The total for New South Wales includes £25,000 payment to Police Superannuation Fund. Similar payments in Victoria and Queensland come to £17,000 and £23,000 respectively, while smaller amounts are included in the returns for other States. The cost per head of the population in each State for the period 1908 to 1912 was as follows:—

COST OF POLICE PER INHABITANT, 1908 to 1912.

(COMMONWEALTH.)

State.	1908.	1909.	1910.	1911.	1912.
	s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales ...	5 11	5 11	6 2	6 2	6 8
Victoria ...	4 10	5 0	5 2	5 1	5 2
Queensland ...	7 6	7 8	8 3	8 4	9 8
South Australia ...	4 11	5 0	4 10	5 2	5 6
Western Australia ...	9 5	8 10	8 11	8 8	8 7
Tasmania ...	4 4	4 4	4 3	4 4	4 6
Northern Territory ...	...	...	...	58 6	63 2
Commonwealth ...	5 11	5 11	6 2	6 2	6 7

The relatively high cost per head in Queensland and Western Australia is due to the fact that there are in those States extensive areas of sparsely settled country, in which mounted patrols have to be maintained.

In view of the small number of its white population and the vast extent of country to be patrolled, the figures for the Northern Territory necessarily shew a very high average.

§ 2. Lower (Magistrates') Courts.

1. Introductory.—In considering the criminal returns of the various States, due allowance must be made on account of several factors, such as the relative powers of the courts, both lower and higher, etc. In the case of lower courts, the actual number of laws in each State, the breach of which renders a person liable to fine or imprisonment, must be taken into account. Again, the attitude of the magistracy and police towards certain classes of offences is a factor, for in the case of liquor laws, or laws connected with vagrancy or gaming, the views of magistrates, and instructions issued to the police, may be responsible for considerable variations in the returns. The strength and distribution of the police forces, and the age constitution and distribution of the State's population, also influence the results. In any consideration of criminal returns, due weight should also be given to the prevalence of undetected crime, but information on this point can only be obtained for the State of Victoria. It may be mentioned that each State has its own separate judicial system, the Commonwealth jurisdiction being confined to the High Court of Australia, which is largely a Court of Appeal intermediate to the Privy Council, although it has also original jurisdiction, and the Commonwealth Court of Arbitration and Conciliation. Full particulars regarding the judicial power of the Commonwealth will be found in Chapter III. of the Commonwealth Constitution (see page 29).

2. Powers of the Magistrates.—In New South Wales there is no general limit to the powers of the magistrates in regard to offences punished summarily, their authority depending in such case on the statute which creates the offence and gives them jurisdiction. Except in the case of a very few statutes, and excluding cumulative sentences,

the power of sentence is limited to six months. Imprisonment in default of payment of fine is regulated by a scale limiting the maximum period according to the sum ordered to be paid, but in no case exceeding twelve months. Actions for debt and damage within certain limits also come within magisterial jurisdiction. In cases of debts, liquidated or unliquidated, the amount recoverable is not exceeding £50 before a court constituted of a stipendiary or police magistrate at certain authorised places, and not exceeding £30 at any other place before a court constituted of a stipendiary or police magistrate or two or more justices of the peace. The amount in actions of damage is limited to £10, but may extend to £30 by consent of parties.

In Victoria the civil jurisdiction of magistrates is restricted to what may be designated ordinary debts, damages for assault, restitution of goods, etc., where the amount in dispute does not exceed £50. No definite limit is fixed to the powers of the magistrates on the criminal side, and for some offences sentences up to two years may be imposed. The proportion of long sentences is, however, comparatively small.

In Queensland, generally speaking, the maximum term of imprisonment which justices can inflict is six months, but in certain exceptional cases, such as offences against sections 233 and 445 of the criminal code (betting-houses and illegally using animals), sentences of twelve months may be imposed. No limit exists as to the extent to which cumulative sentences may be applied, but in practice the term is never very lengthy.

In South Australia, under the Minor Offences Act, magistrates can impose sentences up to six months, and under the Summary Convictions Act, up to three months. The Police Act of 1869 gives power to sentence up to one year, with hard labour, in the case of incorrigible rogues; while under the Quarantine Act of 1877, and the Lottery and Gaming Act of 1875, sentences of two years may be imposed.

Under the Petty Sessions Act of 1867, in Tasmania, any person charged with having committed, or with having aided or abetted in the commission of an offence, in regard to property of a value not exceeding £10, may, on conviction, for a first offence, before two or more justices in Petty Sessions, be imprisoned for any term not exceeding one year, and for a term not exceeding two years for a second or subsequent offence.

3. Persons Charged at Magistrates' Courts.—The total number of persons who were charged before magistrates in each State is given below for the five years 1908 to 1912:—

PERSONS CHARGED BEFORE MAGISTRATES IN THE COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	66,233	64,502	73,960	75,114	89,951
Victoria ...	58,778	52,658	52,060	44,526	53,087
Queensland ...	19,687	19,824	22,104	25,482	27,323
South Australia ...	6,589	7,332	8,328	8,435	10,685
Western Australia ...	12,685	12,961	13,260	13,862	15,092
Tasmania ...	7,048	6,831	7,079	6,597	7,084
Northern Territory...	...	...	...	92	219
Commonwealth ...	171,020	164,108	176,791	174,108	203,441

As the table shews, the number of charges at Magistrates' Courts in New South Wales increased during 1912 by nearly 20 per cent. It would, however, be rash to conclude that crime is therefore on the increase in that State, for a scrutiny of the detailed returns shews that the bulk of the increase took place in offences against good order, and in the indefinite "not included" class, which comprises breaches of various enactments, such as the Local Government Act, Commonwealth Defence Act, etc. These offences hardly come within the category of ordinary crime.

The considerable falling-off in the returns for Victoria during 1911 was due in large measure to the decline in summons cases under the Education Act, the figures for 1911 being 4695, as compared with 12,317 in the preceding year. An increase in summons cases accounted for the rise in the total for 1912, to which summonses contributed 33,273 cases, as against 25,128 in the previous year. A scrutiny of the summons returns shews that the rise was due largely to an increase in breaches of the Education Act, for which the figures advanced from 4695 in 1911 to 7470 in 1912. Further, the summons cases for 1912 include in the column "other" 2936 breaches of the Defence Act, this entry appearing, of course, for the first time in the 1912 returns. The above considerations afford an excellent illustration of the necessity for analysis of the total returns prior to drawing therefrom any deductions in regard to the increase or otherwise of criminality. (See also in this connection § 2, 1. *ante*.)

The figures given in the tabulation above include, of course, a number of people who were wrongly charged, and statistically are not of great importance. The actual number of convictions in connection with the persons who appeared before the lower courts in each year of the period 1908 to 1912 is, therefore, given hereunder. A separate line is added shewing the committals to higher courts.

CONVICTIONS AND COMMITTALS AT MAGISTRATES' COURTS, 1908 to 1912.

(COMMONWEALTH.)

State.		1908.	1909.	1910.	1911.	1912.
New South Wales	{ Convictions	57,630	55,767	63,671	65,058	77,611
	{ Committals	1,015	1,081	1,176	1,178	1,490
Victoria	{ Convictions	43,705	38,801	38,555	31,564	38,646
	{ Committals	577	580	551	564	571
Queensland	{ Convictions	17,710	17,584	19,805	23,072	24,996
	{ Committals	417	442	455	529	425
South Australia...	{ Convictions	5,664	6,324	7,229	7,303	9,184
	{ Committals	89	111	117	99	121
Western Australia	{ Convictions	10,695	10,910	11,433	11,936	13,251
	{ Committals	187	177	192	204	162
Tasmania	{ Convictions	5,903	5,930	6,250	5,756	6,108
	{ Committals	63	44	48	57	60
Northern Territory	{ Convictions	...	...	...	75	183
	{ Committals	...	...	...	...	8
Commonwealth	{ Convictions	141,307	135,316	146,943	144,764	169,979
	{ Committals	2,348	2,435	2,539	2,631	2,837

4. **Convictions for Serious Crime.**—While the figures given in the preceding table refer to the entire body of convictions, the fact must not be lost sight of that they include a large proportion of offences of a technical nature, many of them unwittingly committed, against various Acts of Parliaments. Cases of drunkenness and minor breaches of good order, which, if they can be said to come within the category of crime at all, at least do so in a very different sense to some other offences, also help to swell the list. The following table has, therefore, been prepared for the purpose of shewing the convictions at magistrates' courts for what may be regarded as the more serious offences, *i.e.*, against the person and property, either separately or conjointly, and forgery and offences against the currency:—

CONVICTIONS FOR SERIOUS CRIMES AT MAGISTRATES' COURTS, 1908 to 1912.
(COMMONWEALTH.)

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	4,779	4,764	5,224	5,075	5,904
Victoria ...	2,794	2,626	2,673	2,362	2,655
Queensland ...	1,433	1,526	1,479	1,540	1,495
South Australia ...	540	513	487	488	554
Western Australia ...	1,143	1,074	996	1,025	1,053
Tasmania ...	575	548	609	557	566
Northern Territory ...	...	...	...	6	11
Commonwealth ...	11,264	11,051	11,468	11,053	12,238

Compared with the population the above figures give the following results per 10,000 inhabitants:—

CONVICTIONS FOR SERIOUS CRIME PER 10,000 INHABITANTS, 1908 to 1912.
(COMMONWEALTH.)

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	30.2	29.7	32.0	30.7	33.9
Victoria ...	22.2	20.4	20.8	17.8	19.6
Queensland ...	26.1	27.0	25.0	25.0	23.7
South Australia ...	13.6	12.5	12.1	11.9	13.1
Western Australia ...	43.1	39.6	36.7	35.7	34.9
Tasmania ...	31.6	29.8	31.9	29.3	29.5
Northern Territory ...	...	...	...	18.1	32.7
Commonwealth ...	26.6	25.6	26.2	24.6	26.3

5. **Decrease in Crime.**—The figures quoted in the preceding table show that during the last five years the rate of serious crime has slightly declined, while if the comparison be carried back to 1881 the position is seen to be still more satisfactory. The rate of convictions at magistrates' courts per 10,000 of the population is given below for each of the years 1881, 1891, 1901, and 1912. Only the more serious offences, particularised in the preceding paragraph, have been taken into consideration.

RATE OF CONVICTIONS FOR SERIOUS CRIME IN THE COMMONWEALTH.

Year.	Convictions per 10,000 Persons					
1881 ...	...	...	...	...	...	69.3
1891 ...	...	...	...	...	...	44.8
1901 ...	...	...	...	...	...	29.1
1912 ...	...	...	...	...	...	26.3

6. **Need of Statistics of Distinct Persons.**—The figures already quoted refer to total convictions, and in respect of individuals necessarily involve a considerable amount of duplication, especially in minor offences, such as drunkenness, petty larcenies, etc., in which the same offender appears before the court many times in the course of the year. In a few of the States it is possible to obtain the number of distinct persons arrested, but there are no means of arriving at the total distinct persons convicted before the magistrates in any State.

7. Causes of Decrease in Crime.—The statistics given shew that there has been a considerable decrease in crime throughout Australia. The results so far quoted are restricted entirely to the lower or magistrates' courts. There has also been a gratifying decrease in regard to offences tried at the higher courts, as will be seen later.

Attempts have been made to account for this decline: *e.g.*, advance in education, enlightened penological methods, etc. Much depends upon what is meant by education. Many classed in census statistics as "educated" can barely read and write. In this connection, moreover, it ought not to be forgotten that collaterally with the introduction of ordinary intellectual education certain people have departed from their pristine virtues. The deterrent effect of punishment, in respect of many offences, notably drunkenness, vagrancy, petty larcenies, etc., appears to be almost negligible. In general, punishment has declined in brutality and severity, and has improved in respect of being based to a greater extent upon a scientific penological system, though in this latter respect there is yet much to be desired. Recent advances in penological methods will be referred to in a subsequent section. Here it will be sufficient to remark that under the old régime, a prisoner on completion of a sentence in gaol was simply turned adrift on society, and in many cases sought his criminal friends, and speedily qualified for readmission to the penitentiary. Frequently he was goaded to this by mistaken zeal on the part of the police, who took pains to inform employers of the fact of a man having served a sentence in gaol. For a long time any assistance to discharged prisoners was in the hands of private organisations, such as the Salvation Army Prison Gate Brigade, but in some of the States, and notably in New South Wales, the authorities themselves took after the welfare of discharged prisoners in the way of finding work, providing tools, etc.

Improvements in the means of communication and identification have been responsible for some of the falling-off noticeable in the criminal returns, the introduction of the Bertillon system having contributed to certainty of identification. In his report for the year 1910 the Inspector-General of Police in New South Wales states that "criminals have a wholesome dread of the finger print system, and I have not the slightest doubt that it is one of the principal causes of the diminution of serious crimes." Part of the improvement may no doubt be referred also to the general amelioration in social conditions that has taken place during the last fifty years.

8. Drunkenness.—The number of cases of drunkenness and the convictions recorded in connection therewith during the period 1908 to 1912 will be found in the following table:—

CASES AND CONVICTIONS—DRUNKENNESS, 1908 to 1912.

(COMMONWEALTH.)

State.	1908		1909.		1910		1911.		1912.	
	Cases	Convictions	Cases.	Convictions.	Cases	Convictions.	Cases.	Convictions.	Cases.	Convictions.
New South Wales ...	27,976	27,817	27,495	27,363	27,542	27,380	29,398	29,299	33,915	32,720
Victoria ...	13,102	6,546	12,436	7,025	12,719	7,272	13,603	7,557	13,521	7,446
Queensland ...	9,203	9,185	9,169	9,162	10,870	10,849	12,824	12,767	11,225	14,213
South Australia ...	3,063	3,024	3,481	3,455	4,383	4,323	4,673	4,627	5,470	5,416
Western Australia ...	3,506	3,441	4,007	3,955	4,550	4,506	4,857	4,808	6,257	6,174
Tasmania ...	543	527	709	690	761	741	756	740	644	633
Northern Territory ...	...	...	...	...	...	...	34	34	80	80
Commonwealth ...	57,393	50,590	57,237	51,590	60,825	55,071	66,145	59,892	73,115	66,682

The number of convictions is, as might naturally be expected, almost identical with the number of cases. Victoria, however, is an exception, but in this State it is explained that offenders are generally discharged on a first appearance, and no conviction is recorded, a similar procedure being also adopted in the case of those arrested on Saturday and detained in custody till Monday. The logic of excluding these cases from the list of convictions is certainly open to doubt.

The convictions for drunkenness per 10,000 of the population during each of the years from 1908 to 1912 are given hereunder :—

CONVICTIONS FOR DRUNKENNESS PER 10,000, 1908 to 1912.

(COMMONWEALTH.)

State.	1908.	1909	1910.	1911.	1912.
New South Wales ...	175.9	170.4	167.7	167.0	188.1
Victoria ...	52.4	54.7	56.7	56.8	54.9
Queensland ...	167.1	161.1	183.4	207.8	225.0
South Australia ...	76.0	84.1	107.7	112.5	128.4
Western Australia ...	129.8	146.0	166.2	167.7	204.8
Tasmania ...	29.0	37.5	38.8	38.9	33.0
Northern Territory...	...	...	...	102.4	238.1
Commonwealth ...	119.5	119.4	126.0	133.2	143.5

The convictions for drunkenness taken by themselves are not an altogether satisfactory test of the relative sobriety of the inhabitants of each State, inasmuch as several important factors must be taken into consideration. The age and sex constitution of the people, for example, is by no means identical in each State, Western Australia having by far the largest proportion of adult males. Owing to the smallness of the population the figures for the Northern Territory are, of course, abnormal. The avocations of the people affect the result, since persons engaged in strenuous callings are, on the whole, more likely to indulge in alcoholic stimulants than those employed in less arduous ones. The distribution of the population is also a factor, the likelihood of arrest or summons for drunkenness obviously being greater in the more densely populated regions, and lastly, allowance must be made for the attitude of the magistracy, the police, and the public generally in regard to the offence.

It is not unusual to supplement statistics of drunkenness by furnishing also the relative consumption of alcoholic beverages. Deductions drawn therefrom will be very misleading if they fail to take into account also the consumption of non-intoxicating beverages such as tea and coffee, and the general habit of the people. Throughout the greater part of Europe, tea and coffee are consumed but sparingly, while Australia, as is well known, is one of the greatest tea-drinking countries of the world.

The following table shewing the consumption of spirits, wine, and beer per head of the population has, with the exception of the figures relating to the Commonwealth, been compiled from returns prepared by the British Board of Trade. The figures quoted for the Commonwealth refer to the year 1912, and for the other countries mentioned cover the quinquennium 1907-11.

CONSUMPTION OF ALCOHOLIC BEVERAGES IN VARIOUS COUNTRIES.

Country.	Consumption per Head of Population.			Country.	Consumption per Head of Population.		
	Spirits.	Wine.	Beer.		Spirits.	Wine.	Beer.
	Imp. Galls.	Imp. Galls.	Imp. Galls.		Imp. Galls.	Imp. Galls.	Imp. Galls.
United Kingdom...	0.76	0.27	26.94	Canada ...	0.96	0.11	6.22
Commonwealth ...	0.86	0.5	13.16	German Empire	1.37	1.12	22.86
New Zealand ...	0.78	0.15	9.88	France ...	1.38	34.32	8.48
Union of South Africa	0.33	0.70	1.28	United States ...	1.04	0.54	16.72

9. **Treatment of Drunkenness as Crime.**—Though the problem of the correct method of dealing with dipsomania is by no means an easy one, it seems fairly clear that the present plan of bringing offenders before magistrates, and subjecting them to the penalty of imprisonment or fine, has little deterrent effect, as the same offenders are constantly reappearing before the courts. Further, the casting of an inebriate into prison, and placing him in his weakened mental state in the company of professional malefactors, doubtless tends to swell the ranks of criminals and certainly tends to lower his self-respect. Examination of the prison records in New South Wales some years ago disclosed the fact that over 40 per cent. of the gaol population had commenced their criminal career with a charge of drunkenness. During the last few years the dangers of moral contamination in this way have been more accurately appreciated, and a system of classification of prisoners has been adopted whereby the petty offender is as far as possible kept from association with the more evilly-disposed. With regard to drunkards, however, the Comptroller of Prisons in New South Wales advocates the entire abandonment of the system of repeated fine or imprisonment in favour of a course of hospital treatment, and this has to some extent been accomplished by the Inebriates Acts of 1900 and 1909, under which habitual drunkards may be detained for long periods. The Comptroller-General of Prisons in Queensland states in his report for the year 1907 that "the drunken habit in many cases is merely one of many symptoms which jointly indicate the existence of a graver condition than simple habitual drunkenness."

10. **Remedial Treatment of Inebriates.**—Legislation has been passed in each State providing for the commitment of inebriates to special Government institutions, but so far New South Wales and Victoria are the only States in which such institutions have been established. The laws in the various States are as follows:—New South Wales, Inebriates Act 1900; Victoria, Inebriates Act 1904; Queensland, Inebriate Institutions Act of 1896; South Australia, Inebriates Act of 1881; Western Australia, Lunacy Act 1903, Pt. iv., Habitual Drunkards; Tasmania, Inebriates Act 1885, Inebriate Hospitals Act 1892. Curative work was first undertaken by the Government of New South Wales in 1907. The institutes are connected with the gaols, and, naturally, custodial measures are still a strong feature in their management; nevertheless the results so far have been encouraging. In Victoria an institute purporting to be wholly remedial was founded in 1907. It may be mentioned that there are private retreats in each State, but these are not officially subsidised or inspected.

11. **Treatment of Habitual Offenders.**—In New South Wales the Habitual Criminal Act of 1905 gives judges the power of declaring a prisoner, after a certain number of sentences, to be an habitual criminal, and as such to be detained until, in the opinion of the authorities, he is fit to be at large. At the end of 1912 there were forty persons in prison under this Act. The Indeterminate Sentences Act came into force in Victoria in July, 1908, and during the five years the Act has been in operation, 157 prisoners have been admitted to the three reformatory prisons, and fifty-three have been released on probation on the recommendation of the Indeterminate Sentences Board. Somewhat similar Acts are in force in South Australia and Tasmania. The provisions of the Habitual Criminals Amendment Act of 1907 were put into force in

South Australia in 1909, and twelve criminals declared to be habitual offenders were in confinement in the Labour Prison at the end of 1912. Legislation of this character has not yet been adopted in Queensland, but its introduction is proposed. Naturally it will be some time before the full effect of these measures on the prevalence of crime can be estimated. The Comptroller-General of Prisons in New South Wales states, however, that the system has exercised a wholesome deterrent effect on the criminal who is not a prisoner.

12. Treatment of First Offenders.—In all the States and in New Zealand statutes dealing with first offenders have been in force for some years, the dates of passing the Acts being as follows: New South Wales, 1894; Victoria, 1890; Queensland and South Australia, 1887; Western Australia, 1892; Tasmania and New Zealand, 1886. The method of procedure is practically the same in all cases, *i.e.*, with regard to most first offenders the magistrate or judge is empowered to allow the offender to go free on recognisances being entered into for his good behaviour for a certain period. In practice, this humane law has been found to work excellently, very few of those to whom its provisions have been extended having been found to relapse into crime.

13. Children's Courts.—Special courts for the trial of juvenile offenders have been established in New South Wales, Victoria, Western Australia, and New Zealand within the last few years, while Children's Courts, although not under that name, are practically provided for by the State Children's Acts of 1895 and 1900 in South Australia. The object of these courts is to avoid, as far as possible, the unpleasant surroundings of the ordinary police court. This subject is also dealt with in detail in the section dealing with Public Hygiene.

14. Committals to Superior Courts.—In a previous section it has been pointed out that comparisons of criminality based on a consideration of the total returns from magistrates' courts are somewhat inadequate, seeing that the figures include numbers of cases which are merely technical breaches of laws having in some instances a purely local significance. The committals to higher courts give a better basis of comparison, although even in this connection allowance must be made for the want of uniformity in jurisdiction. The table below gives the number of committals in each year from 1908 to 1912, with the proportion of such committals per 10,000 of the population. The rates are shewn on a separate line.

COMMITTALS TO SUPERIOR COURTS (COMMONWEALTH), 1908 to 1912.

State.				1908.	1909.	1910.	1911.	1912.
New South Wales	...	...	No.	1,060	1,135	1,233	1,223	1,923
			Rate	6.7	7.1	7.6	7.4	11.1
Victoria	...	...	No.	577	580	551	564	571
			Rate	4.6	4.5	4.3	4.2	4.2
Queensland	...	...	No.	417	442	455	529	425
			Rate	7.6	7.8	7.7	8.6	6.7
South Australia	...	...	No.	89	111	117	99	121
			Rate	2.2	2.7	2.9	2.4	2.9
Western Australia	...	...	No.	187	177	192	204	162
			Rate	7.0	6.5	7.1	7.1	5.4
Tasmania	...	...	No.	63	44	48	57	60
			Rate	3.5	2.4	2.5	3.0	3.1
Northern Territory	...	...	No.	...	...	...	...	8
			Rate	...	...	...	...	23.8
Commonwealth	...	...	No.	2,393	2,489	2,596	2,676	3,270
			Rate	5.7	5.8	5.9	6.0	7.0

The above figures shew that the rate of committals for serious crime has increased slightly during the last five years, but if the comparison be carried farther back, it will be found that, as compared with the earlier years, there has been a considerable improvement. This will be evident from an examination of the following figures, which shew the rate of committals per 10,000 persons in Australia at various periods since 1861:—

RATE OF COMMITTALS IN AUSTRALIA, 1861 to 1912.

Year ...	...	...	...	...	1861.	1871.	1881.	1891.	1901.	1912.
Committals per 10,000 inhabitants	...	...	...	...	22	14	12	11	8	7

The decline in proportion to population since 1861 has therefore been about 70 per cent.

§ 3. Superior Courts.

1. **Convictions at Superior Courts.**—The total number of convictions at superior courts, together with the rate per 10,000 of the population, is shewn below for each of the years 1908 to 1912:—

CONVICTIONS AT SUPERIOR COURTS (COMMONWEALTH), 1908 to 1912.

State.				1908.	1909.	1910.	1911.	1912.
New South Wales	...	...	No.	614	619	546	538	620
			Rate	3.9	3.9	3.3	3.3	3.6
Victoria	...	...	No.	466	480	435	477	501
			Rate	3.8	3.4	3.4	3.6	3.7
Queensland	...	...	No.	292	345	376	328	384
			Rate	4.8	6.1	6.4	5.3	6.1
South Australia	...	...	No.	68	86	101	74	86
			Rate	1.7	2.1	2.5	1.8	2.0
Western Australia	...	...	No.	106	87	95	98	92
			Rate	4.0	3.2	3.5	3.4	3.1
Tasmania	...	...	No.	29	24	27	38	25
			Rate	1.6	1.3	1.4	2.0	1.3
Northern Territory	...	...	No.	...	...	...	4	3
			Rate	...	...	...	12.0	8.9
Commonwealth	...	...	No.	1,575	1,591	1,580	1,557	1,711
			Rate	3.8	3.7	3.6	3.5	3.7

The figures for Victoria, which in previous editions were exclusive of summons cases, have been adjusted for the last five years so as to include all cases.

In considering the above figures allowance must be made for the various factors enumerated in a preceding paragraph. Tasmania, it will be noted, shews by far the smallest proportion of serious crime, while the figures available shew that the island State is relatively the smallest consumer of alcoholic beverages. That a definite causal relation exists between the figures shewn by the respective tables is not, however, obvious. The figures for the Northern Territory are, of course, somewhat abnormal.

2. **Offences for which Convictions were Recorded at Superior Courts.**—In the following table will be found a classification of the principal offences for which persons were convicted at the higher courts during each year of the period 1908 to 1912. Owing

to lack of uniformity in the presentation of the returns for the several States the information is confined to the chief offences against the person only. In the case of Victoria no information is available regarding the convictions on summons committals. The figures quoted refer to convictions in the Commonwealth during the period dealt with.

CONVICTIONS FOR SERIOUS CRIME, SUPERIOR COURTS, 1908 to 1912.

(COMMONWEALTH.)

Offences.	1908.	1909.	1910.	1911.	1912.
Murder and attempts at ...	26	24	31	18	33
Manslaughter ...	20	21	15	15	16
Rape and crimes of lust ...	60	59	77	97	88
Other offences against the person ...	278	260	250	235	221

While the individual totals shew considerable fluctuations, the returns generally manifest considerable improvement. The general total of convictions for all offences against the person shews a decline since 1901 of about 17 per cent., and since 1908 of about 7 per cent.

3. Capital Punishment.—The table below gives the number of executions in each State during the period 1908 to 1912:—

EXECUTIONS (COMMONWEALTH), 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	...	...	...	...	1
Victoria ...	1	...	...	...	1
Queensland ...	...	2	1	...	...
South Australia ...	1	...	3	...	...
Western Australia ...	2	1	1	2	...
Tasmania ...	...	...	...	...	...
Commonwealth ...	4	3	5	2	2

In the early days of the history of Australia the penalty of death was attached to a large number of offences, many of which at the present time would be dealt with in the lower or magistrates' courts. With the growth of settlement, and the general amelioration in social and moral conditions, the list was, however, considerably curtailed, and the existing tendency is practically to restrict death sentences to cases of murder. It may be remarked that in cases of rape, which is a capital offence in some of the Australian States, the penalty has been but sparingly inflicted during the last few years. Juries are reputed to be loth to convict on this charge, owing to the uncertainty whether sentence of death will be pronounced.

During the period 1861 to 1880 the average number of executions in the Commonwealth was nine, from 1881 to 1900 the average was six, while for the period 1901 to 1910 the figure stood at four.

§ 4. Prisons.

1. **Prison Accommodation and Prisoners in Gaol.**—The table below shews the number of prisons in each State and the accommodation therein at the end of 1912:—

PRISONS AND PRISON ACCOMMODATION (COMMONWEALTH), 1912.

State.	Number of Prisons.	Accommodation in—		Prisoners at End of Year.
		Separate Cells.	Wards.	
New South Wales	30	2,279	*	1,257
Victoria	18	1,487	730	880
Queensland	12	574	380	529
South Australia	12	756	385	287
Western Australia	24	795	117	356
Tasmania	2	200	228	69
Northern Territory	3	19	5	12
Commonwealth	101	6,110	...	3,390

* Not available.

The number of prisoners in gaol, exclusive of debtors, at the 31st December in each of the years 1908 to 1912, is given below. A separate line is added in each instance shewing the proportion per 10,000 of the population.

PRISONERS IN GAOL (COMMONWEALTH), 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
New South Wales ... { Number	1,417	1,333	1,235	1,173	1,257
... { Proportion	9.0	8.3	7.6	7.1	7.2
Victoria ... { Number	875	844	859	797	880
... { Proportion	7.0	6.5	6.7	6.0	6.5
Queensland ... { Number	493	516	527	514	529
... { Proportion	9.0	9.1	8.9	8.4	8.4
South Australia ... { Number	247	276	269	224	287
... { Proportion	6.2	6.7	6.7	5.4	6.8
Western Australia ... { Number	351	365	311	323	356
... { Proportion	13.2	13.5	11.5	11.3	11.8
Tasmania ... { Number	96	81	72	65	69
... { Proportion	5.3	4.4	3.8	3.4	3.6
Northern Territory ... { Number	...	...	...	...	12
... { Proportion	...	...	...	...	35.7
Commonwealth ... { Number	3,479	3,415	3,273	3,096	3,390
... { Proportion	8.2	7.9	7.5	6.9	7.3

From the preceding table it will be seen that the proportion to population of prisoners in gaol has fallen considerably during the last five years, while, if the comparison be carried farther back, the position is seen to be still more favourable, the prisoners in gaol in the Commonwealth numbering as much as 16 per 10,000 of the population in 1891.

2. Improvement of Penological Methods.—During recent years Australia, in common with most other civilised countries, has introduced considerable modifications and improvements in methods of prison management. Under the old régime punishment partook more or less of the character of reprisal for wrongdoing, and the idea of constituting the prison as a reformatory agency was in the background. But of recent years there has been an earnest attempt at effecting a moral reformation in the unfortunates who lapse into crime. This aspect of prison management has been specially prominent in New South Wales. A short account of the re-organisation of the prison system in this State appears in preceding Year Books (see No. V., p. 922), but considerations of space preclude its repetition here. At the present time it is found that good results have followed the principles of scientific classification and restricted association of prisoners, together with the provision of separate institutions for the treatment of inebriates. It is proposed to introduce in New South Wales the system of carrying on afforestation by prison labour, somewhat after the manner of that in vogue for several years in New Zealand, and in 1911 a site near Tuncurry, on the Manning River, was selected for the purpose of initiating the scheme. That there is some connection between mental and physical health and crime is proved by the condition in which many persons are received into gaol. In a large number of instances prisoners are found suffering from contagious diseases. Under the Prisoners Detention Act such persons may be kept in gaol until cured, but unfortunately the provisions of the Act do not apply to short sentenced prisoners detained in lieu of paying fines, many of whom have been known to be afflicted with disease.

In 1902 the system of finger-print identification of criminals was introduced, and by the year 1903 bureaux had been established in the various States for the exchange of records. Very successful results have attended the introduction of the system.

Space will not permit of more than a passing reference to the improvements brought about in prison management in the other States. In Victoria there is an excellent system of classification and allocation of prisoners to different gaols, while at the important penal establishment at Pentridge a careful segregation into no less than five distinct classes is carried out. It is proposed to make better provision at the Pentridge prison for the accommodation and classification of habitual offenders. In common with the other States the latest humane methods of accommodation and prison treatment have for some time been employed.

Queensland prisons have been considerably modernised during the last few years. The prison for females at Brisbane has been built on the radiating plan, and embodies the latest ideas in penological methods. Classification of prisoners has been fully carried out in the male and female divisions of Brisbane prison, and at the Stewart's Creek penal establishment. The construction of the buildings does not, however, permit of the plan being adopted in its entirety in all Queensland prisons. Amongst reforms in 1912 were the reduction of the period of separate treatment undergone by prisoners sentenced to hard labour or penal servitude, a remodelling of the remission clauses, and allowance of more liberal privileges in the way of correspondence and visits from friends. Electric light has been installed in the Brisbane prison, and prisoners are allowed to read up to 8 o'clock each evening.

Unusual circumstances have combined to keep crime at a low point in South Australia. In the first place there was never any transportation of criminals to the State, while in the earlier years of its history South Australian lawbreakers were transported elsewhere. The present system was drafted mainly on English and European lines by

the late W. R. Boothby, C.M.G., and under his directions and that of his successor has been found to work admirably. Excellent work for the benefit and assistance of discharged prisoners is performed by the Prisoners' Aid Association.

A Royal Commission in 1911 recommended the adoption of various reforms in connection with the prison system of Western Australia. The bulk of these have been carried out, and include, amongst other things, an extension of the principle of separate treatment, improvement in prisoners' dietary scale, more satisfactory arrangements in regard to remission of sentences, and improvements in regard to hours of labour, leave of absence, etc., for the staff. In his report for the year 1912, the Comptroller-General refers to the heavy cost of the common gaols as compared with the Police Gaols, and recommends the abolition of some of the former. Aid to discharged prisoners in Western Australia is provided for by a strong committee with branches in country towns.

§ 5. Civil Courts.

1. **Lower Courts.**—The transactions of the lower courts on the civil side during each of the last five years are given in the table hereunder. As pointed out previously, the jurisdiction of the courts is by no means uniform in the various States.

LOWER COURTS.—CIVIL CASES, COMMONWEALTH, 1908 to 1912.

State.				1908.	1909.	1910.	1911.	1912.
New South Wales	...	Cases	No.	30,472	32,637	30,059	29,570	32,531
		Amount	£	83,372	87,432	77,700	74,461	93,592
Victoria	...	Cases	No.	32,005	36,894	29,902	28,575	36,043
		Amount	£	157,334	162,393	146,284	129,172	190,485
Queensland	...	Cases	No.	12,016	12,244	11,951	12,511	14,962
		Amount	£	42,863	43,363	45,432	48,374	61,047
South Australia	...	Cases	No.	13,068	13,627	13,845	14,996	18,905
		Amount	£	39,627	41,811	45,380	51,282	60,813
Western Australia	...	Cases	No.	10,570	10,681	9,598	9,773	12,735
		Amount	£	59,863	50,261	42,636	43,413	60,774
Tasmania	...	Cases	No.	4,120	4,863	3,620	5,189	4,487
		Amount	£	25,717	30,855	29,199	33,601	28,571
Commonwealth	...	Cases	No.	102,251	110,951	98,975	100,614	119,663
		Amount	£	408,776	416,115	386,631	380,303	495,282

The figures just given represent the returns from Petty Sessions Courts in New South Wales and Victoria, the Petty Debts cases in Queensland, the Local Courts of South Australia and Western Australia, and the Court of Requests in Tasmania.

2. **Superior Courts.**—In the next table will be found the transactions on the civil side in the Superior Courts during each of the years 1908 to 1912.

The New South Wales returns are to some extent defective, as the figures quoted for amount of judgments include, in the case of the Common Law jurisdiction of the Supreme Court, the total judgments signed, while in the case of the other States the figures refer to sums actually adjudged after trial. For New South Wales, also, the transactions of

district courts refer to the total amounts sued for, and not the sums actually awarded after trial. Statistically the chief importance of the table consists in the fact that it shews a decline in litigiousness in Australia.

SUPERIOR COURTS.—CIVIL CASES, 1908 to 1912.

COMMONWEALTH.

State.		1908	1909.	1910.	1911.	1912.
New South Wales	{ Causes No.	694	800	519	729	847
	{ Amount £	356,210	397,681	269,518	369,145	528,384
Victoria	{ Causes No.	783	733	711	561	637
	{ Amount £	77,081	59,785	53,180	54,552	75,886
Queensland	{ Causes No.	148	142	138	119	108
	{ Amount £	11,574	40,964	18,336	12,208	16,013
South Australia...	{ Causes No.	27	34	23	29	26
	{ Amount £	5,378	14,081	799	13,195	29,352
Western Australia	{ Causes No.	449	414	342	423	496
	{ Amount £	63,649	60,537	39,721	90,078	78,068
Tasmania	{ Causes No.	185	257	210	110	113
	{ Amount £	10,433	8,487	11,879	7,810	7,866
Commonwealth	{ Causes No.	2,286	2,380	1,943	1,971	2,227
	{ Amount £	524,325	581,535	393,433	546,988	735,569

3. Divorces and Judicial Separations.—The number of divorces and judicial separations in each State during the period 1908 to 1912 is shewn below:—

DIVORCES AND JUDICIAL SEPARATIONS, 1908 to 1912.

(COMMONWEALTH.)

State.	1908		1909.		1910.		1911.		1912.	
	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations	Divorces.	Judicial Separations
New South Wales	206	13	287	15	257	9	206	12	343	12
Victoria	151	1	138	1	141	...	214	...	250	2
Queensland	11	2	16	...	21	...	37	1	17	1
South Australia	8	...	12	1	3	...	20	...	11	...
Western Australia	19	...	13	1	27	1	30	2	38	...
Tasmania	7	...	12	1	5	1	5	1	8	...
Commonwealth	402	16	478	19	454	12	502	16	637	15

The average annual number of divorces and judicial separations in the Commonwealth at decennial periods from 1871 to 1910 is given hereunder:—

DIVORCES AND JUDICIAL SEPARATIONS, 1871 to 1910.

			1871-1880.	1881-90.	1891-1900.	1901-10.
Commonwealth	...	...	29	70	358	401

The bulk of the divorces and judicial separations refer, as the table shews, to New South Wales and Victoria, the Acts of 1892 and 1889 in the respective States making the separation of the marriage tie comparatively easy. In some statistical works it is customary to compare the divorces in any year with the marriages in the same year. The comparison is, however, quite valueless, as there is no necessary connection between the figures.

4. **Probates.**—The number of probates and letters of administration granted, together with the value of the estates concerned, is shewn below for each State for the period 1908 to 1912:—

PROBATES AND LETTERS OF ADMINISTRATION, COMMONWEALTH, 1908 to 1912.

State.				1908.	1909.	1910.	1911.	1912.
New South Wales	...	...	{ Number	3,094	3,185	3,336	3,589	3,648
			{ Value £	7,838,572	11,142,068	8,834,934	13,138,068	13,389,806
Victoria	...	...	{ Number	4,345	4,069	4,128	4,614	4,585
			{ Value £	7,128,065	6,480,376	7,430,949	8,469,163	8,533,502
Queensland	...	...	{ Number	706	679	704	729	755
			{ Value £	1,376,255	1,508,883	1,652,691	2,409,495	2,730,039
South Australia	...	...	{ Number	1,025	1,115	1,121	1,057	1,246
			{ Value £	2,105,351	1,939,509	2,422,519	2,855,089	1,993,106
Western Australia	...	...	{ Number	455	413	492	584	552
			{ Value £	955,995	939,318	868,638	844,151	605,622
Tasmania	...	...	{ Number	346	361	375	399	465
			{ Value £	1,023,629	722,011	797,439	596,870	983,618
Commonwealth	...	...	{ Number	9,971	9,822	10,156	10,972	11,251
			{ Value £	20,427,887	22,732,165	22,007,170	28,312,836	28,235,693

As may naturally be expected, the figures in the above table, giving the value of property left each year, shew considerable variations.

5. **Bankruptcies.**—The returns in bankruptcy during each of the last five years are given in the following table.

For several reasons comparisons drawn from the figures in the following table are of little value. In the first place, the statements of assets and liabilities are notably unsatisfactory, particularly in regard to the former. Then, again, there is wide dissimilarity in regard to the laws in force in the various States and the method of procedure thereunder in connection with bankruptcy. Further, there are no means of knowing how many persons in each State who were in a bankrupt condition made private arrangements with their creditors either personally or by intervention of a solicitor. The figures quoted in the table exclude the private arrangements in Victoria and South Australia, and the liquidations in Queensland and Tasmania.

BANKRUPTCIES, COMMONWEALTH, 1908 to 1912.

State.		1908.	1909.	1910.	1911.	1912.
New South Wales ...	(Number	356	381	352	331	395
	Liabilities £	322,850	168,169	176,088	109,359	210,504
	(Assets £	185,507	82,563	119,377	49,390	153,633
Victoria ...	(Number	514	370	359	306	404
	Liabilities £	179,050	129,627	132,841	112,748	265,046
	(Assets £	62,998	96,041	54,381	55,374	159,723
Queensland ...	(Number	303	323	214	227	246
	Liabilities £	70,064	63,321	44,475	41,261	45,508
	(Assets £	10,031	34,541	12,691	9,286	17,020
South Australia ...	(Number	105	108	76	106	154
	Liabilities £	142,450	64,775	77,471	75,347	188,483
	(Assets £	92,719	42,340	44,195	47,314	135,771
Western Australia ...	(Number	100	86	79	75	83
	Liabilities £	49,485	31,791	30,967	24,150	52,276
	(Assets £	17,423	19,252	14,169	9,600	34,920
Tasmania ...	(Number	1	5	1	2	2
	Liabilities £	...	3,903	29,368	7,066	7,012
	(Assets £	...	954	68,183	5,654	2,635
Northern Territory	(Number	...	...	...	1	3
	Liabilities £	...	...	...	348	1,123
	(Assets £	...	...	...	66	44
Commonwealth ...	(Number	1,379	1,273	1,081	1,048	1,287
	Liabilities £	763,899	461,586	491,210	370,279	769,952
	(Assets £	368,678	277,691	312,996	176,684	503,746

6. **High Court of Australia.**—Under the provisions of section 71 of the Commonwealth Constitution Act, the judicial power of the Commonwealth is vested in a Federal Supreme Court, called the High Court of Australia, and in such other courts as the Parliament creates or invests with federal jurisdiction. The Federal High Court possesses both original and appellate jurisdiction, but so far its activities have been confined principally to the latter form. The powers of the court are defined in Chapter III. of the Constitution Act and in the Judiciary Acts of 1903, 1906, 1907, and 1910. At present the court consists of a Chief Justice and six other judges. Sittings of the court are held in the capitals of the various States as occasion may require. The following statement shews the transactions of the High Court for the quinquennium 1908-12:—

COMMONWEALTH HIGH COURT TRANSACTIONS, 1908 to 1912.

Items.	1908.	1909.	1910.	1911.	1912.
I. ORIGINAL JURISDICTION.					
Number of writs issued ...	30	27	28	39	63
Number of causes entered for trial ...	8	4	5	7	7
Verdicts for plaintiffs ...	4	3	1	4	6
Verdicts for defendants ...	5	1	2	3	...
Otherwise disposed of ...	11	17	23	20	20
Amount of judgments ...	£1,058	£182	£2,040	£133	£769
II. APPELLATE JURISDICTION.					
Number of appeals set down for hearing ...	87	76	51	64	89
Number allowed ...	31	40	34	32	43
Number dismissed ...	36	29	14	23	36
Otherwise disposed of ...	20	7	3	9	10
III. AMOUNT OF FEES COLLECTED.					
Amount in each year...	£558	£505	£437	£493	£590

§ 6. Cost of Administration of Justice.

The table below shews the expenditure from Consolidated Revenue during each of the last five years in connection with the administration of justice in each of the States. Expenditure on police and prisons has been separately shewn. With regard to the figures quoted for "other" expenditure, a slight allowance has to be made for the fact that some extraneous expenditure has been included which it was found impossible to disentangle from the total, but the amount is in no instance large. Cost of buildings has been excluded from the return.

EXPENDITURE ON JUSTICE, COMMONWEALTH, 1908 to 1912.

State.			1908.	1909.	1910.	1911.	1912.
			£	£	£	£	£
New South Wales	...	Police	466,994	472,718	504,146	515,569	578,767
		Gaols	84,129	79,814	78,932	81,473	89,712
		Other	242,796	245,024	241,510	260,217	351,886
Victoria	...	Police	306,263	320,831	337,670	345,889	348,227
		Gaols	49,025	49,869	48,714	50,822	50,952
		Other	135,248	147,146	160,627	162,453	165,078
Queensland	...	Police	207,043	220,344	244,945	258,538	306,431
		Gaols	23,797	24,174	25,036	28,257	28,603
		Other	85,804	99,914	104,739	109,507	100,156
South Australia	...	Police	96,979	98,214	96,771	107,872	116,847
		Gaols	15,981	16,841	17,060	17,678	17,776
		Other	30,884	33,662	34,412	37,433	41,392
Western Australia	...	Police	124,518	119,111	120,420	127,458	129,556
		Gaols	32,538	28,536	27,228	27,755	22,291
		Other	69,761	66,072	69,772	78,022	77,544
Tasmania	...	Police	39,105	39,740	40,331	41,535	43,236
		Gaols	5,795	5,698	5,466	5,320	5,664
		Other	16,901	14,511	11,513	14,688	19,524
Northern Territory	...	Police	...	...	...	9,708	10,609
		Gaols	...	...	...	2,247	2,309
		Other	...	...	...	555	2,513
Commonwealth	...	Police	1,240,902	1,270,958	1,344,283	1,406,569	1,533,673
		Gaols	211,365	204,932	202,436	209,552	217,307
		Other	581,394	606,329	622,573	662,875	758,093

With the exception of that of the Northern Territory, the expenditure shewn in the foregoing table is that incurred by the State Governments only, and does not include expenditure in connection with the Federal High Court, which is shewn below for the period 1908-9 to 1912-13:—

EXPENDITURE OF FEDERAL HIGH COURT, 1908-9 to 1912-13.

Year.			Amount.	Year.			Amount.
			£				£
1908-9	...	...	24,037	1911-12	...	...	26,320
1909-10	...	...	23,677	1912-13	...	...	23,334
1910-11	...	...	25,850				

Other items of Federal legal expenditure also not included in the table are Arbitration Court £4690, Crown Solicitor £6046, and general £9679.

For the purposes of comparison the figures in the first table above have been reduced to a population basis, and the results are given in the table following:—

EXPENDITURE ON JUSTICE PER INHABITANT, COMMONWEALTH, 1908 to 1912.

State				1908.	1909.	1910.	1911.	1912.
				s. d.	s. d.	s. d.	s. d.	s. d.
New South Wales	...	...	{ Police	5 11	5 11	6 2	6 3	6 8
			{ Gaols	1 1	1 0	1 0	0 11	1 0
			{ Other	3 1	3 1	2 11	3 2	4 1
Victoria	...	...	{ Police	4 10	4 11	5 3	5 2	5 2
			{ Gaols	0 9	0 9	0 9	0 9	0 9
			{ Other	2 2	2 3	2 6	2 5	2 4
Queensland	...	...	{ Police	7 6	7 10	8 3	8 2	9 8
			{ Gaols	0 10	0 10	0 10	0 11	0 11
			{ Other	3 1	3 6	3 6	3 7	3 2
South Australia	...	...	{ Police	4 11	4 9	4 10	5 3	5 7
			{ Gaols	0 10	0 10	0 10	0 10	0 10
			{ Other	1 7	1 8	1 9	1 9	1 11
Western Australia	...	...	{ Police	9 5	8 10	8 11	8 11	8 7
			{ Gaols	2 6	2 2	2 1	1 9	1 6
			{ Other	5 3	4 10	5 2	5 5	5 1
Tasmania	...	...	{ Police	4 4	4 4	4 3	4 4	4 6
			{ Gaols	0 8	0 7	0 7	0 7	0 7
			{ Other	1 10	1 7	1 2	1 6	2 0
Northern Territory	...	...	{ Police	...	...	...	58 6	63 2
			{ Gaols	...	...	...	13 6	13 9
			{ Other	...	...	...	3 4	15 0
Commonwealth	...	...	{ Police	5 10	5 11	6 2	6 3	6 7
			{ Gaols	1 0	0 11	0 11	1 0	0 11
			{ Other	2 9	2 10	2 10	2 11	3 3

Owing to the smallness of the white population, large area to be policed, and cost of supplies, transport, etc., the figures for the Northern Territory must necessarily appear somewhat abnormal.

The total expenditure in the Commonwealth in connection with the administration of justice has risen from ten shillings per inhabitant in 1901 to ten shillings and ninepence in 1912. Police expenditure has increased by about tenpence per head, the average for gaols is about threepence per head less, while the expenditure on courts and the remaining machinery of justice has increased by twopence per head, during the same period.

SECTION XXIV.

PUBLIC BENEVOLENCE.

§ 1. Introductory.

1. **General.**—Charity and charitable effort in Australia may be classified under three headings, viz.:—(a) State; (b) public; (c) private. To the first belong all institutions wholly provided for by the State, such as the principal lunatic asylums in the various States, the Government hospitals in Western Australia, and the Government asylums for infirm in New South Wales. The second class comprises public institutions of two kinds, viz.:—(i.) Institutions partially subsidised by the State or State endowed, but receiving also private aid, and (ii.) those wholly dependent upon private aid. To the former division belong such institutions as the Melbourne and other large metropolitan hospitals. In the latter are included institutions established and endowed by individuals for the benefit of the needy generally. All charitable movements of a private or special character are included in the third group.

A more or less accurate statistical account is possible in classes (a) and (b), but in regard to (c) complete tabulation is, for obvious reasons, impossible. Moreover, public response to special appeals, and summary relief in kind, cannot be statistically recorded. Hospitals, orphanages, homes, benevolent asylums, etc., naturally attract the largest share of charitable aid. There are, nevertheless, numerous other and minor charities which mark the course and measure the amount of a considerable volume of private beneficence. In institutions which receive Government aid, management and finance are usually relegated to executive bodies.

The distribution of wealth in the Australian Commonwealth, and the generally favourable conditions, as regards scope for the exercise of natural ability, operate to prevent the development of a permanent pauper class, and at the same time lessen in a dual way the burden of charity. This result is brought about by the increase, on the one hand, of the number of people whose prosperity enables them to relieve the indigent and unfortunate, and by the reduction, on the other, of the number who need assistance. Enactments of State Legislatures have decreed short hours and a liberal holiday allowance for large numbers of persons engaged in industrial and other pursuits, and, even in occupations not covered by Act of Parliament, the general conditions of employment often provide a considerable amount of leisure. This, coupled with an equable climate, enables the community to spend much of its time in the open air, with resultant advantages to its physique and general health. No poor-rate is levied in Australia, and Government aid without return is required only for the aged and disabled. Moreover, although Old Age Pensions are paid by the Commonwealth, the payments are looked upon rather in the light of a citizen's right than as a charity. Reference to the Old Age Pensions will be found in § 3, Miscellaneous, chap. xxxiv.

To meet temporary conditions, or rather, what ought to be temporary conditions, various relief works have been started from time to time, in which the able-bodied who may be forced to seek official relief are required to make some return for the assistance afforded.

In each of the States there are Government asylums for the care of the insane, and the condition of these unfortunates has been steadily ameliorated by the general advance in psychiatry.

Young children deprived of parental training and control are cared for and educated in "orphanages" and "industrial schools," and those who have been guilty of some specific offence, or who are beyond adequate parental control, are committed to "reformatories."

In common with other civilised communities, relief funds have from time to time been organised for famine-stricken territories (*e.g.*, China, India, etc.), or for places where plague, flood, fire, or earthquake has shewn the need of urgent relief. Statistical information in regard to this form of charity is not, however, available. It may be mentioned that the daily Press frequently accepts the duties of collectorship in charity appeals.

2. Charity Reforms.—The evident overlapping of charitable effort has on various occasions led to discussion regarding methods of collection and distribution. The great desideratum in charity organisation is that the available aid should be relegated solely to the relief of distress and suffering. The true interests of the sick poor would thus be conserved, and the real intention of the donors fulfilled. With greater public attention, improved administration has been brought about. Societies to prevent overlapping have been formed, resulting in improved economical collection and distribution of charitable aid, and a better system of using the available accommodation.

Other proposed reforms aim at ascertaining the causes of poverty and crime, and finding the necessary palliative. Increased provision of better houses and workrooms and improved sanitation are advocated, together with more stringent legislative measures to enforce cleanliness and healthy modes of life. Further, Factories Legislation, Health Acts, etc., have enacted provisions for safeguarding dangerous machinery, and permitting only competent persons to be employed thereon.

3. Tabulation of Charities Statistics.—Differences in the organisation of charities prevent uniform tabulation of statistics for all the States, but certain of the larger features of the statistics of benevolence have been combined for the whole Commonwealth. Combinations for the whole of Australia for the five years ended 1912 are given for hospitals, benevolent asylums, orphanages, and hospitals for the insane. Satisfactory tabulation for other charities is not yet possible. Where the combination has been for dissimilar periods the nearest years have been taken.

§ 2. The Larger Charities of Australia.

1. Hospitals.—Most of the State capitals have several large and well-equipped hospitals, and there is at least one in every important town. In large centres there are hospitals for consumptives, women, children, infectious diseases, incurables, etc. The

number of hospitals in Australia, with the admissions, patients treated, deaths, and expenditure, is shewn in the following table. Only general hospitals are tabulated, since the working of "special" institutions is not properly comparable with those which treat cases of all kinds. In 1909, the figures for assisted hospitals in Western Australia were included for the first time, not having been available for previous years.

HOSPITALS IN THE COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
Number of institutions ...	312	337	338	355	368
Number of beds ...	12,057	12,630	13,342	13,732	14,574
Admissions during year ...	107,292	112,102	119,091	125,822	139,378
Indoor patients treated ...	114,668	118,928	126,234	133,652	144,692
Deaths ...	8,560	8,814	8,946	9,642	11,235
Expenditure ...	£ 758,993	805,787	802,212	888,802	1,102,134

In addition to those admitted to the institutions there are large numbers of out-patients. The exact number of these cannot be given, but a rough estimate of distinct cases for 1912 places the total at about 300,000.

Fuller details of hospital statistics are given for 1912 in the table below, the States of the Commonwealth being shewn separately:—

GENERAL HOSPITALS.—NUMBER, STAFFS, AND ACCOMMODATION OF HOSPITALS IN THE COMMONWEALTH, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	N.T.	C'with
Number of Hospitals—								
Government ...	3	50	2	8	21	2	1	87
Other ...	143	5	79	15	29	10	...	281
Total ...	146	55	81	23	50	12	1	368
Medical Staff—								
Males ...	692	70	178	90	63	36	1	1,149
Females ...	9		6	4	...	...	...	
Total ...	701	70	184	94	63	36	1	1,149
Nursing Staff and Attendants—								
Males ...	102	14	173	66	76	4	1	496
Females ...	1,465	648	731	360	406	127	5	3,742
Total ...	1,567	*1,167	904	426	482	131	6	*4,683
Accommodation—								
Number of dormitories, etc. ...	963	466	515	141	159	113	3	2,360
Capacity in cubic ft. ...	6,788,370	4,776,700	3,149,144	1,362,029	1,654,473	699,377	29,228	18,459,321
Number of beds ...	5,379	3,714	2,798	938	1,208	515	22†	14,574
Cubic ft. to each bed	1,262	1,286	1,125	1,452	1,370	1,358	1,328	1,267

* Inclusive, in Victoria, of 505 paid staff: sexes not stated. † Exclusive of beds on verandahs.

GENERAL HOSPITALS.—PATIENTS TREATED IN HOSPITALS IN THE COMMONWEALTH, 1912.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	C'wth.
Indoor Relief: Distinct Persons Treated—								
Males	33,571	17,769	19,049	4,984	6,878	3,097	211	85,559
Females	28,140	12,400	9,248	3,582	3,267	2,465	31	59,133
Total	61,711	30,169	28,297	8,566	10,145	5,562	242	144,692
Inmates at begining of Year—								
Males	1,960	1,455	1,197	349	426	170	21	5,488
Females	1,412	985	526	220	161	150	2	3,456
Total	3,372	2,440	1,633	569	587	320	23	8,944
Admissions and Re-admissions during Year—								
Males	31,611	17,576	17,942	5,041	6,452	2,927	198	81,747
Females	26,728	13,030	8,722	3,697	3,106	2,315	33	57,631
Total	58,339	30,606	26,664	8,738	9,558	5,242	231	139,378
Discharges—Recovered:								
Males	22,061	15,120	16,138	3,131	3,071	2,606	133	62,260
Females	20,685	11,530	7,868	2,467	1,581	2,061	26	46,218
Total	42,746	*26,650	*24,006	5,598	4,652	*4,667	159	108,478
Relieved:								
Males	5,688	†	†	1,195	2,491	†	37	19,411
Females	3,640	†	†	729	1,115	†	3	15,487
Total	9,328	†	†	1,924	3,606	†	40	114,898
Unrelieved:								
Males	347	239	349	222	208	21	10	1,896
Females	617	160	184	226	101	34	...	1,322
Total	1,464	399	533	448	309	55	10	3,218
Not stated:								
Males	...	415	107	14	13	76	...	625
Females	...	269	37	18	4	60	...	388
Total	...	684	144	32	17	136	...	1,013
Deaths—								
Males	2,885	1,818	1,335	476	616	220	17	7,367
Females	1,603	1,063	546	254	242	158	2	3,868
Total	4,488	2,881	1,881	730	858	378	19	11,235
Inmates at End of Year—								
Males	2,090	1,439	1,120	352	479	174	23	5,676
Females	1,595	993	613	223	224	152	4	3,804
Total	3,685	2,432	1,733	575	703	326	26	9,480
Average Daily Number Resident—								
Males	2,033	\$	\$	382	478	222	17	\$
Females	1,540	\$	\$	271	224	153	3	\$
Total	3,573	2,491	\$	653	702	375	20	\$

* Including relieved. † Included in recovered. ‡ Cases relieved are included in those recovered, in Victoria, Queensland, and Tasmania. § Information not available.

The revenue and expenditure of the institutions were as follows:—

GENERAL HOSPITALS.—REVENUE AND EXPENDITURE, 1912.

Particulars	N.S.W.	Vic.	Q'land.	S. Aust.	W.Aust.*	Tas.	N.T.	C'with.
Revenue—	£	£	£	£	£	£	£	£
Fees of patients, etc.	58,416	25,151	20,713	8,638	12,709	6,765	166	132,558
Government grants	204,361	67,236	122,303	60,893	61,596	19,050	†	535,439†
Other ...	166,688	195,678	82,118	12,135	25,252	8,565	†	490,431†
Total ...	429,465	288,065	225,129	81,666	99,557	34,380	†	1,158,428†
Expenditure—								
Salaries ...	140,276	175,236	73,532‡	25,021	39,092	24,786	1,892	1,102,134
Maintenance ...	166,516		96,455	40,221	61,162	10,113	1,670	
Other, including buildings ...	103,527	97,265	27,317	16,604			1,459	
Total ...	410,319	272,501	197,304	81,846	100,254	34,899	5,011	1,102,134

* Exclusive of assisted hospitals. † Information not available. ‡ Excluding Government grants, etc., Northern Territory. § Including rent.

2. **Hospitals for General and Special Cases.**—The tables here given refer to general hospitals. In addition there are hospitals for “specials” (such as women’s, children’s, and infectious diseases hospitals), and institutions nearly allied to hospitals (such as consumptive sanatoria). In the first and second numbers of the Commonwealth Year Book, these were tabulated with general hospitals. Where the institutions carry on general hospital relief, they are still included with those establishments.

(i.) *New South Wales.* A Government hospital is established at Little Bay. There are four women’s and one children’s hospitals in the metropolis. Other leading institutions are the Thomas Walker Convalescent Hospital, Dental Hospital, Home for Incurables, Hospital for Infants and Asylum for Women and Children, Infants’ Home, etc. A feature of late years has been the establishment of general hospitals in many country towns of growing importance.

(ii.) *Victoria.* Special hospitals, not included in the above tabulation, comprise the Women’s Hospital, with infirmary and midwifery departments, the Children’s Hospital, the Hospital for Women and Children, a Government Consumptive Sanatorium, Inebriates’ Institute, Convalescent homes, etc.

(iii.) *Queensland.* There are six lying-in and two children’s hospitals in Queensland, and a sanatorium.

(iv.) *South Australia.* In connection with the leading general hospital in the metropolis, there is a consumptive home and infectious diseases block; there are also a children’s hospital, two lying-in homes, sanatorium, convalescent home, home for incurables, etc.

(v.) *Western Australia.* The leading general hospitals are Government establishments. There is a lying-in establishment in connection with the metropolitan women’s home. There are also homes for the dying and incurable, homes and rests for sailors, strangers, etc.

(vi.) *Tasmania.* In Tasmania there are several institutions, which pay particular regard to “special cases”; these include two hospitals for contagious diseases; two

hospitals for women; a consumptive sanatorium; and a convalescent home. Other important institutions of a general nature are the New Town Charitable Establishment, and the Home for Invalids.

3. **Benevolent and Destitute Asylums.**—A marked increase has taken place in the amount of aid bestowed upon the aged. Two elements, each of them independent of the growth of population, have influenced this increase. One is, that the general age of the community has advanced—the large flow of immigration of fifty and sixty years ago having been mostly of persons in the prime of life; the other is the increased regard paid in all British communities to the well-being of the helpless. The result in Australia has been that numerous establishments have been founded for the housing and protection of such as are no longer able to care for themselves. The institutions are supported by Government and municipal aid, public subscriptions, charity performances, bequests, etc., and in many cases relatives of indigent and afflicted persons contribute to their maintenance.

The impossibility of an entirely satisfactory statistical tabulation in regard to all forms of charitable aid, is especially marked in the case of benevolent institutions, since the conditions under which they have been established in the different centres in the Commonwealth have caused divergence in their development and in the classes of cases treated by them. For example, in Western Australia the Home for Destitute Women includes a maternity ward, for which the statistics are not separately kept. Since the predominating function of the Institution is aid to the destitute, it has been included among benevolent asylums. In Victoria, nine of the hospitals are also Benevolent asylums, and they are included wholly under the former. In South Australia, the Destitute Asylum includes lying-in and children's departments.

BENEVOLENT INSTITUTIONS.—REVENUE AND EXPENDITURE, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wlth.
	£	£	£	£	£	£	£
Revenue—							
Government aid ...	49,247	18,418	27,490	15,307	25,422	...	135,884
Municipal aid ...	...	1,006	...	...	...	...	1,006
Public subs., legacies, etc....	3,824	11,200	768	...	...	...	15,792
Fees ...	144	7,077	...	435	...	...	7,659
Other ...	5,393	3,403	649	226	...	...	9,671
Total...	58,608	41,104	28,907	15,971	25,422	...	170,012
Expenditure—							
Buildings ...	5,637	8,454	26	451	...	...	14,568
Maintenance ...	51,568	36,424	28,809	15,520	25,422	...	157,743
Other ...	2,360	442	144	...	...	...	2,946
Total...	59,565	45,320	28,979	15,971	25,422	...	175,257

(i.) *Government Asylums for the Infirm, New South Wales.* There are six of these institutions in New South Wales, with something over 4000 beds, usually in continuous use. Inmates at the end of 1912 numbered 2879; deaths numbered 418; and the expenditure amounted to £35,369 for the six months ended 30th December, 1912.

(ii.) *Benevolent Asylums, Victoria.* Besides the asylums attached to hospitals, there are eight institutions in Victoria. The daily average number indoors was 2045 for 1911-12, with 678 distinct cases of outdoor relief. Deaths numbered 514. The total expenditure was £45,320 (of which £8454 was spent on buildings), and receipts £41,104—£18,418 from Government and £22,686 from other sources.

(iii.) *Benevolent Asylums, Queensland.* There are four institutions in Queensland, with 1079 beds. The total number in the asylums during 1912 was 1683, with a daily average of 1042. Deaths numbered 166. Expenditure amounted to £28,979, and receipts to £28,907, of which £27,490 was Government aid.

(iv.) *Destitute Asylum, Adelaide.* Outside of hospitals and lunatic asylums the destitute of South Australia are dealt with and relieved at the Destitute Asylum, Adelaide. The institution includes lying-in and children's departments. In the asylum the average number of inmates in 1911-12 was 297. There were eighty-six deaths during the year. Expenditure totalled £7287. In addition, £7756 was dispensed through the institution for outdoor relief of the destitute in both metropolitan and rural districts.

(v.) *Homes for the Destitute, Western Australia.* There are four of these homes in Western Australia supported by public funds. Attached to the Perth Women's Home is a lying-in department. Outdoor relief to the poor and aged is given, the amount expended being included in expenditure in the above table. Nearly thirteen hundred indoor cases were dealt with during 1912. There were 107 deaths.

(vi.) *Charitable Establishments, Tasmania.* There are two principal Government charitable establishments in Tasmania. Beds numbered 283 in 1911-12. The total number of persons treated was 492, of whom 64 died. The daily average number resident was 217. Total expenditure was £4735, receipts amounting to the same sum, of which £4001 was contributed by the State.

4. **Orphanages, Industrial Schools, etc.**—The organisation of charitable effort varies greatly in regard to orphans and waifs. In many institutions shelter and some form of industrial training is offered to destitute children of all classes, whether orphans or not, while some of those styled orphanages do not confine their relief to orphans strictly so called. The figures in the next table are those for institutions where, it is believed, the principal effort is on behalf of those who are really orphans:—

ORPHANAGES IN COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
Number of institutions	38	42	42	41	41
Admissions	1,393	1,613	1,626	1,760	1,563
Total number of inmates during year ...	4,078	5,150	5,331	5,465	5,057
Deaths	19	14	22	12	18
Expenditure*	£ 65,154	61,088	72,882	74,415	63,362

* Incomplete. Expenditure is not available for some orphanages.

(i.) *New South Wales.* The care of destitute and neglected children is entrusted to the State Children's Relief Board, whose officers are charged with a strict supervision regarding the welfare of the children and the treatment of them by those to whom they are boarded out. Useful trades and profitable occupations are taught, and many of the children become useful members of society. The number of children under the board's supervision in 1912-13 was 4734. The board's expenditure in that year was £110,770, or £23 8s. per child.

There are also twelve orphanages, with about 700 persons under care. Deaths are but one or two annually, and the yearly expenditure fluctuates between £7000 and £10,000.

New South Wales had in 1910 three reformatory institutions—the Carpenterian State Reformatory, and the "Sobraon" State Training Ship for boys; and the Girls' State Industrial School.

The training ship attained very satisfactory results. In forty years more than 5000 boys were dealt with, and the records shew that 98 per cent. of these have developed into good citizens. In 1911 the "Sobraon" was purchased by the Commonwealth, to be used in connection with naval training. The boys were placed in the Mittagong Farm Homes and the Brush Farm Home and Reformatory. To the Reformatory are sent boys who have been convicted in the courts, whom it is desired to keep apart from other prisoners, and who are taught useful trades.

For 1912 the figures are:—Brush Farm Home for boys (Carpenterian Reformatory)—enrolment, 158; Girls' Industrial School—enrolment, 145.

(ii.) *Victoria.* There are ten orphanages in Victoria, with 1581 beds. The total number under care in 1911-12 was about 2000. Average annual admissions are about 500. Deaths numbered seven in 1911-12. The average annual expenditure is about £23,000. In 1912 it was £27,463.

At the end of 1912 there were three industrial and nine reformatory schools in the State. Of these, one industrial and one reformatory school are wholly controlled by the Government, being used merely as receiving and distributing depôts. The children are sent thence to situations, foster homes or other institutions dealing with State wards. The other schools are under private management, receiving an allowance for State wards. Many of the reformatory children are placed with friends or licensed out. On 31st December, 1912, the wards of the State numbered 7784—classed mostly as neglected children. There were also some children free from legal control, who, being incapacitated, were maintained by the State. The total expenditure for 1912 was £107,619, of which £103,092 was borne by the Government.

Under Government control, but not administered as charity, are the training ships "John Murray" and "Dart," on which general instruction is imparted and special training given in technical seamanship.

(iii.) *Queensland.* There are seven orphanages in Queensland, with over 1000 beds. The number under care is about 1000, deaths averaging seven per annum. The expenditure in 1912 was £13,990.

There are also six industrial and reformatory schools. The total number of children under State control at the end of 1912 was 4493. The gross cost was £53,907, of which £50,293 was borne by the Government.

(iv.) *South Australia.* The State Children's Department exercises a supervision over the probationary and industrial schools, the reformatories, and the Methodist Home. The total number of admissions into these institutions in 1911-12 was 205. The number of inmates on the 30th June, 1912, was 178, in addition to which 1352 were placed out, or had been adopted or apprenticed. There were eleven deaths of children in industrial schools, and eight of those placed out and in other institutions. The number of children under State control on 30th June, 1912, was 1530. The expenditure for 1911-12 was £27,312 in gross, of which the Government aid was £24,840.

There are three orphan asylums. The number under care during 1912 was 300. There were no deaths in the year, and expenditure amounted to £3553.

(v.) *Western Australia.* In Western Australia there were, in 1912, eight orphanages (including industrial orphanage schools). The inmates in these institutions during the year were 818, and the number in institutions on 31st December was 755. There were no deaths during the year. The State expenditure was about £10,000.

In the Government Industrial School there were, at the end of 1912, 52 inmates, 87 having been admitted during the year. No deaths occurred. At the end of 1912 825 children were under State control. The net cost to the State was £14,107, parents' contributions amounting to £663.

(vi.) *Tasmania.* There were three admissions to the orphanage in 1912-13, and forty-two inmates during the year. No deaths occurred. Expenditure amounted to £575.

There are three industrial schools under benevolent institutions in the State. Admissions in 1912-13 numbered nineteen, and total inmates during the year 118. No deaths occurred. The expenditure was £2810.

Under the boarding-out system upwards of 200 children are placed out at an expenditure of between £2000 and £2600. The total number of children under State control at the end of 1912 was 196, the gross cost to the State of children's relief being £2586, of which £231 represents parents' contributions.

(vii.) *Neglected Children.* The following table summarises the number of neglected children under State Departments. In New South Wales a number of children are boarded out with their own mothers, and the inclusion of these would make the total number of State-aided children in that State 10,120. Similar provisions are in force in some of the other States, the figures, however, not being available.

**STATE RELIEF OF NEGLECTED CHILDREN.—TRANSACTION OF STATE DEPARTMENTS
IN THE COMMONWEALTH, 1912.**

Particulars.	N.S.W.*	Vict.	Qld.	S.A.†	W.A.‡	Tas.	Cwlth.
Number of Children under State control at end of year—							
Males	2,756	4,065	2,258	823	465	131	10,498
Females	1,978	3,719	2,240	707	360	65	9,069
Total	4,734	7,784	4,498	1,530	825	196	19,567
	£	£	£	£	£	£	£
Gross cost to State of children's relief	116,654	107,619	53,907	27,312	14,770	2,586	322,848
Receipts, from parents' contributions, etc.	5,884	4,527	3,674	2,472	663	231	17,451
Net cost	110,770	103,092	50,233	24,840	14,107	2,355	305,397

* For year ended 5th April following. † For year ended 30th June preceding. ‡ For the year 1911.

5. **Lepers.**—Lazarets for the treatment of lepers have been established in New South Wales (Little Bay); Queensland (Peel Island, near Brisbane, and Dayman Island, Torres Straits); and the Northern Territory (Mud Island). Quarantine and isolation stations have also been used for the segregation of patients. A great deal of information concerning the beginning and progress of leprosy in Australia has been collected and published by Dr. J. Ashburton Thompson, Chief Government Medical Officer and President of the Board of Health, New South Wales, from whose reports the following table has been compiled:—

CASES OF LEPROSY RECORDED IN THE COMMONWEALTH, 1855 to 1911.

State.	1855 to 1906.	1907.	1908.	1909.	1910.	1911.	Total.
New South Wales	140	4	2	2	5	3	156
Victoria	*27	—	—	—	—	—	*27
Queensland	†186	21	23	8	6	6	†250
South Australia	37	1	—	—	—	—	38
Western Australia	4	—	3	4	3	2	16
Tasmania	1	—	—	—	—	—	1
Total	*†395	26	28	14	14	11	*†488

* In addition, some Chinese.

† In addition, many Kanakas.

6. **Hospitals for the Insane.**—The method of compiling insanity statistics has been fairly uniform throughout the States, but the various methods of observing the early stages of the development of insanity introduce an element of uncertainty which considerably reduces the value of comparison. In the summary given below, licensed houses (except as regards expenditure) are included in the total for New South Wales and Victoria, but in the latter State the figures are exclusive of reception houses and observation wards in gaols:—

HOSPITALS FOR INSANE,* COMMONWEALTH, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
Number of institutions	30	31	31	33	35
Number of beds	14,317	14,546	14,978	15,825	15,911
Admissions	2,638	2,740	2,936	3,079	3,017
Total number under treatment	17,373	17,915	18,870	19,086	19,669
Discharged as recovered, relieved, &c.	1,159	1,245	1,309	1,404	1,365
Deaths	1,071	1,046	1,177	1,246	1,311
Expenditure	£511,468	514,531	561,677	616,302	693,772

* Exclusive of receiving wards at two general hospitals and including six licensed houses for insane in Victoria.

The proportion of insane, as well as the total number returned as under treatment, has changed very little during recent years. In the next table the number of insane under official care in Australia is given, and in the table following the proportion of insane to population.

The number of insane persons in institutions in Australia at the end of each of the last five years was as follows:—

INSANE PERSONS IN THE COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
New South Wales	5,673	5,902	6,148	6,351	6,160
Victoria	5,014	5,097	5,241	5,340	5,470
Queensland	2,184	2,227	2,260	2,283	2,322
South Australia	1,051	1,051	1,055	1,084	1,082
Western Australia	707	782	793	842	871
Tasmania	507	506	505	521	534
Commonwealth	15,136	15,565	16,002	16,421	16,439

For the period embraced in the tables Victoria shews the highest rate of insanity, roughly one in 250 persons. It is stated that this is chiefly owing to the proportionately greater number of old persons in that State. On the other hand, in Western Australia, where the population is much younger, a considerably lower insanity rate has prevailed, being about one in 400 in 1908, and about one in 350 in the four following years.

PROPORTION OF INSANE, COMMONWEALTH, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
PER 1000 OF THE POPULATION.					
New South Wales ...	3.58	3.66	3.74	3.79	3.46
Victoria ...	4.01	3.99	4.03	3.92	3.96
Queensland ...	3.92	3.85	3.77	3.67	3.65
South Australia ...	2.70	2.65	2.57	2.57	2.50
Western Australia ...	2.72	2.94	2.87	2.86	2.84
Tasmania ...	2.64	2.62	2.61	2.69	2.71
Commonwealth ...	3.58	3.60	3.62	3.59	3.47

Consequent upon the development of a more rational attitude to the treatment of mental cases, a greater willingness is being shewn to submit necessary cases to treatment at an earlier stage than formerly. Hence an increase in the number of recorded cases does not necessarily imply an actual increase in insanity. It is important to bear this in mind, because the small progressive increase in the preceding table is probably to be attributed largely, if not solely, to this circumstance. The increase in expenditure is another evidence of the greater care bestowed on the insane.

The leading features in regard to institutions for the care of the insane are given below for 1912:—

HOSPITALS FOR THE INSANE.—NUMBER, STAFFS, AND ACCOMMODATION, COMMONWEALTH, 1912.

Particulars.	N.S.W.	Vict.*	Qld.	S.A.	W.A.	Tas.	C'wlth.
Number of Institutions—							
Government ...	9	9†	3	1	2	1	25
Private ...	3	6†	...	...	1	...	10†
Total ...	12	15	3	1	3	1	35
Medical Staff—							
Males ...	20	19	7	2	3	3	54
Females ...	1	...	...	...	...	...	1
Total ...	21	19	7	2	3	3	55
Nursing Staff & Attendants—							
Males ...	564	462	141	73	84	71	1,395
Females ...	471	442	89	56	35	52	1,145
Total ...	1,035	904	230	129	119	123	2,540
Accommodation—							
No. of dormitories ...	1331	1,389	442	¶	39	365	¶
Capacity in cubic feet ...	3,413,012	3,444,100	1,353,918	¶	620,952	781,932	¶
No. of beds ...	45,971	5,052	2,306	1,159	762	661	15,911
Cubic feet to each bed ...	{ 1600\$ 11,000¶ }	682	587	¶	815	1,183	¶

* Exclusive of Receiving House, Royal Park, and of the Receiving Wards at Bendigo and Geelong hospitals. † There are six private licensed houses in Victoria, in which there were 109 cases at end of 1912. Other figures for these private asylums are not available. ¶ Government hospitals only. § Ordinary dormitory. || Hospital dormitory. ¶ Information not available

HOSPITALS FOR THE INSANE.—PATIENTS TREATED, 1912.

Particulars.	N.S.W.	Vic.*	Q'ld.	S.A.	W.A.	Tas.	C'wilt
No. of distinct persons treated during year							
Males	4,751	3,170	1,756	758	630	308	11,373
Females	3,173	3,015	1,012	559	240	297	8,296
Total	7,924	6,185	2,768	1,317	870	605	19,669
Admissions & re-admissions during year—							
Males	741	456	293	142	160	44	1,836
Females	472	350	152	91	76	40	1,181
Total	1,213	806	445	233	236	84	3,017
Discharges—Recovered—							
Males	287	96	113	1	51	18	566
Females	199	104	83	...	45	17	448
Total	486	200	196	1	96	35	1,014
Relieved and unrelieved—							
Males	62	43	17	64	15	2	203
Females	43	41	9	48	3	4	148
Total	105	84	26	112	18	6	351
Absconders—							
Males	2	5	...	...	...	...	7
Females	...	1	...	...	...	...	1
Total	2	6	...	...	...	...	8
Deaths—							
Males	335	235	132	78	58	19	857
Females	166	151	52	44	30	11	454
Total	501	386	184	122	88	30	1,311
Inmates at end of year—							
Males	3,718	2,758	1,454	615	630	269	9,444
Females	2,442	2,712	868	467	241	265	6,995
Total	6,160	5,470	2,322	1,082	871	534	16,439
Average daily number resident—							
Males	3,716	2,529	1,432	605	615	268	9,165
Females	2,418	2,409	852	462	242	258	6,641
Total	6,134	4,938	2,284	1,067	857	526	15,806

* Exclusive of inmates of the Receiving House, Royal Park, and of Receiving Wards attached to the hospitals at Bendigo and Geelong, and of five private licensed houses.

In some of the States it is the practice to allow persons well advanced towards recovery to leave the institutions and reside with their relatives or friends, but they are nevertheless under supervision of the asylum authorities and are kept on the books. These patients are not shewn in the above table as inmates. In nearly every case absconders are retaken. They are shewn above as readmitted.

The revenue of Government asylums is small in comparison with their cost, and consists chiefly of patients' fees. The proportion of expenditure borne by the State amounts to about 86 per cent.

HOSPITALS FOR THE INSANE (GOVERNMENT ONLY), REVENUE AND EXPENDITURE, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wealth.
Revenue—	£	£	£	£	£	£	£
Fees of patients ...	37,723	27,108	7,620	6,799	3,961	5,208	88,419
Other ...	3,745	...	1,195	23	883	461	6,307
Total ...	41,468	27,108	8,815	6,822	4,844	5,669	94,726
Expenditure—							
Salaries ...	129,671	93,107	37,020	16,340	21,127	10,364	307,629
Maintenance ...	108,360	94,285	32,344	20,986	20,000	5,953	281,928
Other ...	28,265	*67,745	757	...	...	7,448	104,215
Total ...	266,296	255,137	70,121 *	37,326	41,127	23,765	693,772

* Buildings and repairs.

(i.) *New South Wales.* The latest return available shews that the average length of residence in the hospitals of persons who died, was 4 years 8 months for males and 5 years 9 months for females; and that of persons who were discharged, was 1 year 2 months for males and 1 year 7 months for females.

There are also two State reception houses, where suspected persons are confined for observation, being subsequently either discharged or transferred to lunatic asylums. In two of the gaols observation wards have been instituted, with similar functions.

(ii.) *Victoria.* The average residence in the hospitals of those who died was 6 years 5 months for males, and 9 years 10 months for females; that of those discharged, 1 year 3 months for males, and 1 year 4 months for females.

There are lunacy wards in two of the general hospitals; and also a State receiving house where persons are placed for observation, and subsequently discharged or transferred to asylums.

(iii.) *Queensland.* The average residence in the institutions of those who died was 7 years 10 months for males and 9 years 3 months for females; and of those who were discharged, 1 year and 3 months for males and 1 year and 4 months for females.

There are also three reception houses for insane, which act as depôts to which patients are sent with a view to determining whether their mental illness is of a merely temporary character, readily to be relieved, or is of such a nature as to need further treatment at the State asylums.

(iv.) *South Australia.* The average residence of those who died was 6 years and 5 months for males and 9 years for females; of those discharged, 11 months for males and 8 months for females.

(v.) *Western Australia.* The period of residence of those who died during the year averaged 2 years 5 months for males and 4 years 3 months for females; of those who were discharged, 1 year 2 months for males and 1 year 1 month for females.

(vi.) *Tasmania.* The period of residence of those who died was 10 years 4 months for males and 8 years 4 months for females; that of those discharged, 10 months for males and 1 year 2 months for females.

(vii.) *Causes of Insanity.* The proportion of causes of insanity to the total of ascertained causes in Australia in the five years 1908-1912 shews that hereditary influences have been the chief factor, more than one-fifth of the total ascertained causes coming under this head. Domestic troubles, adverse circumstances, etc., have also been a fruitful source. About one case in six was due to intemperance in drink.

**PROPORTION OF ASCERTAINED CAUSES, etc., OF INSANITY, COMMONWEALTH,
1908 to 1912.**

Causes, Previous History, etc.	1908.	1909.	1910	1911.	1912.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Domestic trouble, adverse circumstances, mental anxiety	14.5	11.5	12.0	10.6	11.8
Intemperance in drink	12.9	10.1	14.4	15.0	16.3
Hereditary influence, ascertained; congenital defect, ascertained	18.8	15.0	16.9	18.7	21.7
Pregnancy, lactation, parturition and puerperal state, uterine and ovarian disorders, puberty, change of life	6.8	6.4	5.4	5.9	6.6
Previous attacks	13.5	12.0	12.2	9.3	9.5
Accident, including sunstroke	4.0	3.0	2.1	3.0	2.3
Old age	8.0	9.7	10.8	9.9	9.2
Other causes ascertained	21.5	32.3	26.2	27.6	22.6
All ascertained causes	100.0	100.0	100.0	100.0	100.0

7. Treatment of Inebriates.—The treatment of inebriates is referred to in the section dealing with Public Justice hereinbefore. (See page 803.)

8. Protection of Aborigines.—For the protection of the aboriginal Australian race there are institutions, under the supervision of Aborigines Boards, where the blacks are housed and encouraged to work, the children receiving elementary education. The work is usually carried on at mission stations, but many of the natives are nomadic in habit of life, and receive food and clothing when they call, whilst others but rarely come under the notice of the boards. The native race is extinct in Tasmania. The average annual expenditure on maintenance, etc., for the last five years was—New South Wales, £19,000; Victoria, £4200; Queensland, £14,800; South Australia, including Northern Territory, £13,500; Western Australia, £23,500; Commonwealth, £75,000.

9. Other Charitable Institutions.—Owing to variety of name and function of other charitable institutions it has been found impracticable to give detailed results. The aid given in kind—food, clothing, tools of trade, etc.—is considerable, whilst the shelter and treatment afforded ranges from a bed for a night for casual callers in establishments ministering minor charity, to indoor treatment over long periods in those that exist for the relief of the aged and infirm. The institutions not so particularised include asylums for the deaf, dumb, and blind, maternity institutions and infant homes, homes for the destitute and aged poor, industrial colonies, night shelters, crèches, homes of hope, rescue homes, free kindergarten and ragged schools, auxiliary medical charities, free dispensaries, benevolent societies and nursing systems, ambulance and health societies, boys' brigades, humane and animals' protection societies, prisoners' aid associations, shipwreck relief societies, bush fires and mining accident relief funds, etc.

10. State Expenditure on Charities.—The table below gives the amount expended by Government on charities in each of the last five years. In some of the States amounts have been included for minor items, which in other States are charged to other heads:—

STATE EXPENDITURE ON CHARITIES, 1908 to 1912.

State.	1908.	1909.	1910.	1911.	1912.
	£	£	£	£	£
New South Wales ...	481,887	519,327	528,289	518,484	576,886
Victoria ...	383,086	378,165	385,467	436,859	446,332
Queensland ...	216,144	200,141	205,577	237,224	262,171
South Australia ...	88,752	88,618	87,112	98,236	118,931
Western Australia ...	175,839	149,892	139,700	177,734	184,940
Tasmania ...	47,537	36,316	39,558	43,245	45,166
Commonwealth ...	1,393,245	1,372,459	1,385,703	1,511,782	1,634,426

11. **Total Charitable Expenditure.**—The expenditure in the Commonwealth in money on hospitals, charities, and all forms of relief publicly given, comprising the amounts furnished by Government and those raised by public subscription, etc., but excluding old-age pensions, exceeds £2,700,000 annually.

SECTION XXV.

GENERAL GOVERNMENT.

§ 1. Scheme of Parliamentary Government.

1. **General.**—The legislative power of the Commonwealth is vested in the Federal Parliament, which consists of the Sovereign, the Senate, and the House of Representatives. The Sovereign is represented throughout the Commonwealth by the Governor-General, who, subject to the Constitution of the Commonwealth, has such powers and functions as the Sovereign is pleased to assign to him. In each State there is a State Governor, who is the representative of the Sovereign for the State, and who exercises such powers within the State as are conferred upon him by the Letters Patent which constitute his office, and by the instructions, which inform him in detail of the manner in which his duties are to be fulfilled. The Legislature in each State is also bi-cameral, and consists of (a) a Legislative Council and (b) a Legislative Assembly, or House of Assembly, the legislative powers of these chambers being delimited by the Commonwealth and the State Constitutions. The latter chamber, which is the larger, is always elective; the qualification for the franchise varies in character. The former chamber is, in the case of New South Wales and Queensland, nominated by the Governor-in-Council, but in the other States it is elective, the constituencies being differently arranged and some property qualification for the electorate being required. In the Federal Parliament, however, the qualifications for the franchise are identical for both Houses. A brief account of the constitutional history of each of the States was given in previous issues of this book (see especially Year Book No. 4, pp. 27 to 32).

2. **Number of Members of the Legislatures.**—The following table shews the number of members in each of the legislative chambers in the Commonwealth and in each State in March, 1914:—

MEMBERS OF PARLIAMENTS OF AUSTRALIA, 1914.

Members in—	C'wealth.	N.S.W.	Victoria.	Q'land.	S. Aust.*	W. Aust.	Tas.	Total.
Upper House	36	56	34	40	18	30	18	232
Lower House	75	90	65	72	40	50	30	422
Total ...	111	146	99	112	58	80	48	654

* By "Constitution Further Amendment Act 1913," the number of members in the Upper House was increased to 20, and in the Lower to 46, the increase not to take place, however, until the next general election.

The use of the expressions "Upper House" and "Lower House" in the above statement, though not justified constitutionally, is convenient, inasmuch as the legislative chambers are known by different names in the Commonwealth and in some of the States.

In the Commonwealth Parliament the Upper House is known as the Senate, and in the State Parliaments as the Legislative Council. The Lower House is known as follows:—In the Commonwealth Parliament as the House of Representatives, in the State Parliaments of New South Wales, Victoria, Queensland, and Western Australia as the Legislative Assembly, and in the State Parliaments of South Australia and Tasmania as the House of Assembly.

3. The Cabinet and Executive Government.—The sections of the Commonwealth Constitution Act dealing with the Executive Government are given on pages 28 and 29 hereinbefore. In both the Commonwealth and the State Legislatures the forms of Government have been founded on their prototype, the Imperial Government, and the relations established between the Ministry and the representatives of the people are in accordance with those prevailing in Great Britain. The executive powers in the Commonwealth and in the State Governments are vested in the Governor-in-Council. The Executive Council in the Commonwealth and in the majority of the States is co-extensive with a group of departmental chiefs who are usually spoken of as the Cabinet, and who change with the rise and fall of party majorities. In Victoria and Tasmania, however, the Cabinet on leaving office remain members of the Executive Council, though they no longer attend its meetings, and it is in fact an essential feature of the Cabinet system of Government that they should not do so, except to assist the Governor in transacting purely formal business, or to advise on non-political questions.

(i.) *The Executive Council.* This body is composed of the Governor and the Ministers of State holding office for the time being. The latter are sworn both as Executive Councillors and as Ministers controlling the different administrative departments. It should be observed that all persons living who have held Ministerial office under former Governments are also technically members of the Executive Council, and are thus liable to be specially summoned for attendance at meetings of that body. The meetings are official in character; they are presided over by the Governor-General (or Governor) and are attended by the clerk, who keeps a formal record of its proceedings. At these meetings the decisions of the Cabinet are put into official form and made effective, appointments are confirmed, resignations accepted, proceedings ordered, and notices and regulations published.

The official members of the Executive Council in March, 1914, are specified below. In addition, all living members of past Ministries (see following pages) are technically liable to be officially summoned to attend meetings of the Executive Council :—

OFFICIAL MEMBERS OF THE COMMONWEALTH EXECUTIVE COUNCIL, 1914.

Prime Minister and Minister for

<i>Home Affairs</i> ...	...	The Hon. JOSEPH COOK.
<i>Treasurer</i> ...	...	The Right Hon. SIR JOHN FORREST, P.C., G.C.M.G.
<i>Attorney-General</i> ...	...	The Hon. WILLIAM HILL IRVINE, K.C.
<i>Minister for Defence</i> ...	...	The Hon. EDWARD DAVIS MILLEN.
<i>Minister for External Affairs</i> ...	...	The Hon. PATRICK MCMAHON GLYNN, K.C.
<i>Minister for Customs</i> ...	...	The Hon. LITTLETON ERNEST GROOM.
<i>Postmaster General</i> ...	...	The Hon. AGAR WYNNE.
<i>Vice-President of Executive Council</i>		The Hon. JAMES HIERS MCCOLL.
<i>Honorary Minister</i> ...	...	The Hon. JOHN SINGLETON CLEMONS.
" "	...	The Hon. WILLIAM HENRY KELLY.

Particulars of previous Commonwealth Ministries are given on pages 40-42 hereinbefore, and on pages 832 and 833 following.

(ii.) *The Cabinet.* The meetings of this body are private and deliberative. No one is admitted but the actual Ministry of the day, no records of the meetings transpire, and no official notice is taken of the proceedings. The members of the Cabinet, being the leaders of the party in power in Parliament, control the bent of legislation and must retain the confidence of the people and also of the Governor-General (or Governor), to whom they act as an advising body. They also in effect wield, by virtue of their seats on the Executive Council, the whole executive force of the community. In summoning, proroguing, or dissolving Parliament the Governor-General (or Governor) is usually guided by the advice tendered him by the Cabinet, though legally he is in no way bound to do so. The following statement gives the names of the Ministers of State for the Commonwealth, who have held office since the inauguration of the Commonwealth Government :—

MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM 1st JANUARY, 1901, to MARCH, 1914.

EXTERNAL AFFAIRS.			TRADE AND CUSTOMS.		
Name.	From	To	Name.	From	To
§ Rt. Hon. E. BARTON, P.C., K.C.*	1/1/01	23/9/03	Rt. Hon. C. C. KINGSTON, P.C., K.C.	1/1/01	24/7/03
Hon. A. DEAKIN*	24/9/03	26/4/04	Hon. Sir W. J. LYNE, K.C.M.G.	7/8/03	26/4/04
Hon. W. M. HUGHES	27/4/04	17/8/04	Hon. A. FISHER	27/4/04	17/8/04
Rt. Hon. G. H. REID, P.C., K.C.**	18/8/04	4/7/05	Hon. A. McLEAN	18/8/04	4/7/05
Hon. A. DEAKIN*	5/7/05	12/11/08	Hon. Sir W. J. LYNE, K.C.M.G.	5/7/05	29/7/07
Hon. E. L. BATCHELOR	13/11/08	2/6/09	Hon. A. CHAPMAN	30/7/07	12/11/08
Hon. L. E. GROOM	3/6/09	28/4/10	Hon. F. G. TUDOR	13/11/08	2/6/09
Hon. E. L. BATCHELOR††	29/4/10	8/10/11	Hon. Sir R. W. BEST, K.C.M.G.	3/6/09	28/4/10
Hon. J. THOMAS	14/10/11	31/5/13	Hon. F. G. TUDOR	29/4/10	31/5/13
Hon. P. McM. GLYNN, K.C.	1/6/13	||	Hon. L. E. GROOM	1/6/13	||
ATTORNEY GENERAL.			TREASURER.		
Name.	From	To	Name.	From	To
Hon. A. DEAKIN	1/1/01	23/9/03	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	1/1/01	26/4/04
Hon. J. G. DRAKE	24/9/03	26/4/04	Hon. J. C. WATSON*	27/4/04	17/8/04
Hon. H. B. HIGGINS, K.C.	27/4/04	17/8/04	Rt. Hon. Sir G. TURNER, P.C., K.C.M.G.	18/8/04	4/7/05
Hon. Sir J. H. SYMON, K.C.M.G., K.C.	18/8/04	4/7/05	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	5/7/05	29/7/07
Hon. I. A. ISAACS	5/7/05	11/10/06	Hon. Sir W. J. LYNE, K.C.M.G.	30/7/07	12/11/08
Hon. L. E. GROOM	12/10/06	12/11/08	Hon. A. FISHER*	13/11/08	2/6/09
Hon. W. M. HUGHES	13/11/08	2/6/09	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	3/6/09	28/4/10
Hon. P. M. GLYNN	3/6/09	28/4/10	Rt. Hon. A. FISHER, P.C.*	29/4/10	31/5/13
Hon. W. M. HUGHES	29/4/10	31/5/13	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	1/6/13	||
Hon. W. H. IRVINE, K.C.	1/6/13	||			
HOME AFFAIRS.			DEFENCE.		
Name.	From	To	Name.	From	To
Hon. Sir W. J. LYNE, K.C.M.G.	1/1/01	7/8/03	Hon. Sir J. R. DICKSON, K.C.M.G.	1/1/01	||
Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	7/8/03	26/4/04	Rt. Hon. Sir J. FORREST, P.C., G.C.M.G.	17/1/01	7/8/03
Hon. E. L. BATCHELOR	27/4/04	17/8/04	Hon. J. G. DRAKE	7/8/03	23/9/03
Hon. D. THOMSON	18/8/04	4/7/05	Hon. A. CHAPMAN	24/9/03	26/4/04
Hon. L. E. GROOM	5/7/05	11/10/06	Hon. A. DAWSON	27/4/04	17/8/04
† Hon. T. T. EWING	12/10/06	23/1/07	Hon. J. W. McCAY	18/8/04	4/7/05
Hon. J. H. KEATING	24/1/07	12/11/08	Hon. T. PLATFORD	5/7/05	23/1/07
Hon. H. MAHON	13/11/08	2/6/09	Hon. Sir T. T. EWING, K.C.M.G.	24/1/07	12/11/08
Hon. G. W. FULLER	3/6/09	28/4/10	Hon. G. F. PEARCE	13/11/08	2/6/09
Hon. K. O'MALLEY	29/4/10	31/5/13	Hon. J. COOK	3/6/09	28/4/10
Hon. JOSEPH COOK*	1/6/13	||	Hon. G. F. PEARCE	29/4/10	31/5/13
			Hon. E. D. MILLEN	1/6/13	||
POSTMASTER-GENERAL.			VICE-PRESIDENT OF THE EXECUTIVE COUNCIL.		
Name.	From	To	Name.	From	To
Rt. Hon. Sir JOHN FORREST, P.C., G.C.M.G.	1/1/01	17/1/01	Hon. R. E. O'CONNOR, K.C.	1/1/01	23/9/03
Hon. J. G. DRAKE	5/2/01	7/8/03	Hon. T. PLATFORD	24/9/03	26/1/04
Hon. Sir P. O. Fysh, K.C.M.G.	7/8/03	26/4/04	Hon. G. MCGREGOR	27/4/04	17/8/04
Hon. H. MAHON	27/4/04	17/8/04	Hon. J. G. DRAKE	18/8/04	4/7/05
Hon. S. SMITH	18/8/04	4/7/05	† Hon. T. T. EWING	5/7/05	11/10/06
Hon. A. CHAPMAN	5/7/05	29/7/07	Hon. J. H. KEATING	12/10/06	19/2/07
Hon. S. MAUGER	30/7/07	12/11/08	Hon. G. MCGREGOR	20/2/07	12/11/08
Hon. J. THOMAS	13/11/08	2/6/09	Hon. E. D. MILLEN	3/6/09	2/6/09
Hon. Sir J. QUICK	3/6/09	28/4/10	Hon. G. MCGREGOR	29/4/10	31/5/13
Hon. J. THOMAS	29/4/10	14/10/11	Hon. J. H. McCOLL	1/6/13	||
Hon. C. E. FRAZER	14/10/11	31/5/13			
Hon. AGAR WYNN	1/6/13	||			

* Prime Minister. † Afterwards the Right Hon. Sir E. Barton, P.C., G.C.M.G., etc. ‡ Afterwards the Hon. Sir T. T. Ewing, K.C.M.G. § Still in office. ¶ Died 10th January, 1901. ** Prime Minister, afterwards the Right Hon. Sir G. H. Reid, P.C., K.C.M.G., etc. †† Died 8th October, 1911.

**MINISTERS OF STATE FOR THE COMMONWEALTH OF AUSTRALIA FROM
1st JANUARY, 1901, TO MARCH, 1914—(Continued).**

WITHOUT PORTFOLIO.

Name.	From	To	Name.	From	To
Hon. N. E. LEWIS† ...	1/1/01	23/4/01	Col. Hon. J. F. G. FOXTON ...	3/6/09	28/4/10
Hon. Sir P. O. FYSH, K.C.M.G. ...	24/4/01	7/8/03	Hon. E. FINDLEY ...	29/4/10	31/5/13
Hon. J. H. KEATING ...	5/7/05	11/10/06	Hon. C. E. FRAZER ...	29/4/10	14/10/11
Hon. S. MAUGER ...	12/10/06	29/7/07	Hon. E. A. ROBERTS ...	23/10/11	31/5/13
Hon. J. H. COOK ...	28/1/08	12/11/08	Hon. J. S. CLEMONS ...	1/6/13	†
Hon. J. HUTCHISON ...	13/11/08	2/6/09	Hon. W. H. KELLY ...	1/6/13	†
Hon. A. DEAKIN* ...	5/6/09	28/4/10			

See notes on previous page.

(iii.) *Constitution of Ministries.* The subjoined table shows the constitution of the Ministries in the Commonwealth and the State Governments in March, 1914:—

CONSTITUTION OF MINISTRIES, 1914.

Ministers with Seats in—	C'wealth.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
The Upper House ...	3	1	4	2	2	2	2	16
The Lower House ...	7	9	8	7	4	6	3	44
Total ...	10	10	12	9	6	8	5	60

The names of the members of the Ministries in each State in April, 1914, are shewn in the following statement:—

MEMBERS OF STATE GOVERNMENT MINISTRIES, 1914.

NEW SOUTH WALES—MINISTRY.

Premier, Treasurer, and Min. for Railways—
HON. W. A. HOLMAN.

Colonial Secretary and Minister for Mines—
HON. J. H. CANN.

Attorney-General and Minister for Justice—
HON. D. R. HALL.

Minister for Public Works—
HON. A. GRIFFITH.

Minister for Lands—
HON. J. L. TREFLE.

Minister for Agriculture—
HON. W. G. ASHFORD.

Minister for Labour and Industry—
HON. J. ESTELL.

Vice-President of the Executive Council—
HON. F. FLOWERS, M.L.C.

Minister for Public Instruction—
HON. A. C. CARMICHAEL.

Minister without Portfolio—
HON. H. C. HOYLE.

VICTORIA—MINISTRY.

Premier and Treasurer—
HON. W. A. WATT.

Chief Secretary—
HON. J. MURRAY.

Minister for Water Supply and Agriculture—

HON. W. HUTCHINSON.

Commissioner of Crown Lands and Survey—
HON. H. S. W. LAWSON.

Minister for Mines, Forests and Public Health—
HON. J. D. BROWN, M.L.C.

Minister of Public Instruction and Labour—
HON. SIR A. PEACOCK, K.C.M.G.

Attorney-General and Minister of Railways—
HON. D. MACKINNON.

Commissioner of Public Works—
HON. F. W. HAGELTHORN, M.L.C.

Ministers without Portfolio—
HON. W. BAILLIEU, M.L.C.
HON. W. A. ADAMSON, M.L.C.
HON. T. LIVINGSTON.
HON. J. GRAY.

QUEENSLAND—MINISTRY.

*Premier, Vice-Pres. of Ex. Council, and
Chief Sec.—*
HON. D. F. DENHAM.

Home Secretary and Secretary for Mines—
HON. J. G. APPEL.

Secretary for Public Lands—
HON. J. TOLMIE.

Treasurer and Secretary for Public Works—
HON. W. H. BARNES.

Secretary for Railways—
HON. W. T. PAGET.

Secretary for Public Instruction—
HON. J. W. BLAIR.

Attorney-General—
HON. T. O'SULLIVAN, K.C., M.L.C.

Secretary for Agriculture and Stock—
HON. J. WHITE.

Minister without Portfolio—
HON. A. H. BARLOW, M.L.C.

SOUTH AUSTRALIA—MINISTRY.

*Premier, Treasurer and Minister for
Education—*
HON. A. H. PEAKE.

Chief Secretary—
HON. J. G. BICE, M.L.C.

*Commissioner of Public Works and Minister
of Mines and Marine—*
HON. SIR R. BUTLER.

Attorney-General and Minister of Industry—
HON. H. HOMBURG.

*Commissioner of Crown Lands and Immi-
gration—*
HON. F. W. YOUNG.

Minister for Agriculture and Irrigation—
HON. T. PASCOE, M.L.C.

WESTERN AUSTRALIA—MINISTRY.

*Premier and Colonial Treasurer—*HON. J. SCADDAN.

Minister for Lands and Agriculture—
HON. T. H. BATH.

Minister for Mines and Railways—
HON. P. COLLIER.

Attorney-General and Min. for Education—
HON. T. WALKER.

Minister for Works and Water Supply—
HON. W. D. JOHNSON.

Colonial Secretary—
HON. J. M. DREW, M.L.C.

Ministers without Portfolio—
HON. J. C. DODD, M.L.C.
HON. W. C. ANGIN.

TASMANIA—MINISTRY.

*Premier and Minister for Justice—*HON. J. EARLE.

*Chief Secretary and Minister for Mines and
Labour—*
HON. J. E. OGDEN.

*Treasurer and Minister for Education and
Railways—*
HON. J. A. LYONS.

*Minister of Lands and Works and Agri-
culture—*
HON. J. BELTON.

Minister without Portfolio—
HON. P. MCCrackEN, M.L.C.

4. **The Appointment of Ministers and of Executive Councillors.**¹—Although it is technically possible for the Governor to make and unmake cabinets at his pleasure, under all ordinary circumstances his apparent liberty in choosing his Executive Council is virtually restricted by the operation of constitutional machinery. When a Ministry is defeated in Parliament or at the polls, the procedure both in the Commonwealth and the State Parliaments generally, though not invariably, follows that prevailing in the Imperial Parliament. The customary procedure in connection with the resignation or acceptance of office by a Ministry is described fully in previous issues of the Year Book. (No. 6, page 942.)

5. **Enactments of the Parliament.**—In the Commonwealth, all laws are enacted in the name of the Sovereign, the Senate, and the House of Representatives. The subjects with respect to which the Commonwealth Parliament is empowered to make laws are enumerated in the Constitution Act (see pp. 25-28 hereinbefore). In the States, laws are enacted in the name of the Sovereign by and with the consent of the Legislative Council and Legislative Assembly or House of Assembly. The Governor-General or the State

1. See Jenks' "Government of Victoria," pp. 269 *et seq.*

Governor acts as Viceroy as regards giving the Royal Assent to or vetoing Bills passed by the Legislatures, or reserving them for the special consideration of the Sovereign. In the States, the Councils and Assemblies are empowered generally, subject to the Commonwealth Constitution, to make laws in and for their respective States in all cases whatsoever. Subject to certain limitations, they may alter, repeal, or vary their Constitution. Where a law of a State is inconsistent with a law of the Commonwealth the latter prevails, and the former is, to the extent of the inconsistency, invalid.

6. Powers and Functions of the Governor-General and of the Governors.—The Governor-General and the State Governors act under the authority of the commissions by which they are appointed and of Letters Patent under the Great Seal of the United Kingdom, and according to instructions issued by the Colonial Office and passed under the Royal Sign Manual and Signet.

The office of Governor-General and Commander-in-Chief of the Commonwealth was constituted by Letters Patent issued on the 29th October, 1900, in pursuance of the provisions of the Commonwealth Constitution Act (see p. 20 hereinbefore). The powers and duties of the Governor-General were further defined by Royal instructions passed on the same date. The principal and most important of his functions, legislative as well as executive, are expressly conferred upon him by the terms of the Constitution itself. He is the custodian of the Great Seal of the Commonwealth, and has the appointment of political officers to administer Departments of State of the Commonwealth.

His legislative functions are exercised with respect to proposed laws as finally passed by the Federal Houses of Parliament. Such Bills are presented to the Governor-General for his assent in the King's name, on receiving of which they become law throughout the Commonwealth. The Governor-General may, however, withhold his assent, or may reserve any Bill for the King's pleasure. He may return to the House in which it originated any proposed law with suggested amendments. The King may disallow any law within one year from the date on which it was assented to by the Governor-General.

The Governor-General's executive functions are, under ordinary circumstances, exercised on the advice of his responsible Ministers. Various specific powers are vested in him by the Constitution; he may summon or prorogue Parliament and may dissolve the House of Representatives. He is the Commander-in-Chief of the military and naval forces of the Commonwealth, and is invested by the Crown with the prerogative of mercy in cases of offences committed against the laws of the Commonwealth.

The Governor-General is also invested with authority in certain matters of Imperial interest, such as the control of the naval and military forces of the Commonwealth; the observance of the relations of foreign States to Great Britain, so far as they may be affected by the indirect relations of such States to the Commonwealth; and the treatment of neutral and belligerent ships in Commonwealth waters in time of war.

The Governor-General may not leave the Commonwealth without having first obtained leave from the Imperial Government, to whom alone he is responsible for his official acts. The powers and functions of the State Governors are, within their respective States, very similar to those exercised by the Governor-General for the Commonwealth, and are defined by the terms of their Commissions and by the Royal instructions accompanying the same. A State Governor is the official head of the State Legislature, and assents in the name of the Crown to all Bills passed by the Parliament, except those reserved for the Royal Assent. The latter include certain classes of Bills, which are regulated by the Constitution Acts and by the instructions issued by the Imperial Government. The Governors are, under ordinary circumstances, guided by their Executive Councils, the chief matters in which the exercise of discretion is required being the granting or withholding of a dissolution of Parliament when requested by a Premier; the appointment of a new Ministry; or the assenting to, vetoing, or receiving of Bills passed by the legislative chambers. The Governors are authorised, under certain restrictions, to administer the prerogative of mercy by the reprieve or pardon of criminal offenders within their jurisdiction, and to remit fines and penalties due to the Crown. All moneys to be expended for the public service are issued from the Treasury under the Governor's warrant.

In a recent work in which the above matters are exhaustively discussed,* it is indicated that there are important functions in the hands of a Governor, and that his influence may extend beyond what is anticipated by those who are unfamiliar with the activities of actual government. This is, however, essentially a matter of individual character. A Governor is entitled to the fullest confidence of his Ministers, to be informed at once of any important decisions taken by his Cabinet, and to discuss them with the utmost freedom. He can point out objections, give advice, deprecate measures, and urge alterations, subject, however, to his remaining always behind the scenes. It should be remembered, moreover, that the State Executive Councils owe their existence to the Royal Letters Patent constituting the office of Governor and that, in law, the Governor is never bound to accept the advice of his Ministers. He cannot indeed do many things without their advice, for it is provided by law (either in the Constitution or Interpretation Acts, or by authoritative usage) that a Governor-in-Council must act on the advice of the Council. He cannot therefore perform any act in Council without a majority, though he can always refuse to act, and thus force his Ministers either to give way on the point at issue or to resign their posts. Even in the case of a ministerial act he can forbid a Minister to take any action on pain of dismissal. Nominally a Governor will, of course, be justified in accepting the advice of his Ministers as being a correct statement of the facts and law, but he is not bound to be so satisfied, and in matters of law he must exercise his own judgment if he be in doubt. A Governor is not, however, entitled to refuse to act on the advice of his Ministers because he personally does not approve of their action or policy; his duty is not to his own conscience, but to the people of the State which he governs, and he should execute that duty independently of every other consideration.

Although the above furnishes a brief *resumé* of the powers of a Governor from a legal point of view, in practice the exercise of his powers is generally limited by his ability to persuade his Ministers as to the desirability of any particular course of action. Disagreement with Ministers is only justifiable in extreme cases, and even then it involves the responsibility of finding other Ministers, who must either shew that they have as much support as any other party, or be prepared to administer during a dissolution pending an appeal to the people. It may be remarked that a Governor who cannot work with Ministers possessing the support of the people must be recalled, unless he has acted on Imperial grounds, and the dispute is not one between him and Ministers, but between the Imperial and State Governments.

It may also be pointed out that a Governor, besides acting according to law, has, within the range of what is lawful, to act according to the instructions of the Secretary of State. He is called upon to do so by the instruments which create his office and appoint him Governor, and he obeys the Secretary of State as the mouthpiece of the Crown. Historically, there have been many cases in which these instructions have placed Governors in opposition to their Ministers.

The present Governor-General is the Right Honourable Thomas, Baron Denman, P.C., G.C.M.G., K.C.V.O. He assumed office on the 31st July, 1911, and will retire on the 16th May, 1914. The Governor-General designate is the Right Honourable Sir Ronald Craufurd Munro-Ferguson, P.C., G.C.M.G.† Particulars of previous Governors-General are given on p. 40 hereinbefore.

The following is a list of the Governors of the various States of the Commonwealth:—

<i>New South Wales</i> ...	SIR GERALD STRICKLAND, Count Della Catena, G.C.M.G.
<i>Victoria</i> ...	The Hon. SIR ARTHUR LYULPH STANLEY, K.C.M.G.
<i>Queensland</i> ...	SIR WILLIAM MACGREGOR, M.D., LL.D., G.C.M.G., C.B.
<i>South Australia</i> ...	Lieutenant-Colonel SIR HENRY LIONEL GALWAY, K.C.M.G., D.S.O.
<i>Western Australia</i> ...	Major-General SIR HARRY BARRON, K.C.M.G., C.V.O.
<i>Tasmania</i> ...	The Rt. Hon. SIR WILLIAM GREY ELLISON-MACARTNEY, P.C., K.C.M.G.

* "Responsible Government in the Dominions," A. B. Keith, Oxford, Clarendon Press, 1912, Vol. I. † Sworn in, May 18th, 1914.

7. **Cost of Parliamentary Government.**—The following statement shews the cost of parliamentary government in the Commonwealth and in each State, as well as in the whole of Australia, for the year ended the 30th June, 1913:—

COST OF PARLIAMENTARY GOVERNMENT, 1912-13.

Particulars.	C'wth.	N. S. W.	Vict.	Q'ld.	S. A.	W. A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. Governor-General or Governor—								
Governor's salary ...	10,000	5,000	5,000	3,000	4,000	3,984	2,573	33,557
Official secretary's salary ...	650	350		300	...	339	...	
Governor's establishments ...	6,935	...	5,174	2,480	...	1,095	221	
Repairs and maintenance of Governor's residences ...	...	1,180		741	670	2,599	636	31,955
Miscellaneous ...	4,063	2,816	941	400	212	...	150	
Total ...	21,648	9,346	11,115	6,921	4,882	8,017	3,583	65,512
2. Executive Council—								
Salaries of officers ...	115	108	664	240	...	350	(£)	1,477
Other expenses ...	13	...	36	80	...	47	(£)	176
Total ...	128	108	700	320	...	397	...	1,653
3. Ministry—								
Salaries of Ministers ...	12,000	11,040	8,400	8,300	5,000	6,200	3,200	54,140
Other expenses ...	294	2,777	(g)	...	...	1,312	468	4,851
Total ...	12,294	13,817	8,400	8,300	5,000	7,512	3,668	58,991
4. Parliament—								
A. The Upper House:								
Allowances to members ...	20,950	...	...	...	3,200	9,600	2,250	36,000
Railway passes ...	(a)9,252	5,855	1,020	(h)	720	220	750	(k)17,817
Other expenses of members ...	...	...	...	...	109	...	9	118
B. The Lower House:								
Allowances to members ...	39,198	38,887	16,990	19,356	6,779	15,790	3,496	140,496
Railway passes ...	(b)	9,690	1,950	(h)	1,600	310	1,250	(k)14,509
Other expenses of members ...	...	1,816	...	1,532	300	108	19	3,775
C. Miscellaneous:								
Salaries of officers and staff ...	14,550	21,882	12,798	6,685	5,261	3,617	2,694	67,517
Printing ...	10,051	10,823	3,397	2,697	5,352	710	1,765	34,735
Hansard ...	16,407	7,375	7,362	5,794	2,606	4,982	...	44,529
Library ...	4,516	684	1,457	1,128	715	300	120	8,920
Refreshment rooms ...	1,169	106	1,469	850	1,168	1,169	110	6,031
Water, power, light and heat ...	1,501	682	1,019	401	696	...	...	...
Postage and stationery ...	1,249	606	...	291	313	...	...	...
Miscellaneous ...	6,843	(d)7,985	1,078	815	511	2,779	324	27,183
Total ...	125,686	106,493	48,480	39,549	29,350	39,635	12,787	401,980
5. Electoral Office—								
Salaries of officers and staff ...	5,264	995	1,160	1,353	2,256	2,123	1,072	125,942
Other expenses ...	55,942	34,867	16,352	2,307	403	1,838	...	...
Total ...	61,206	(e)35,862	17,512	3,660	2,669	3,961	1,072	125,942
6. Cost of Elections ...	(c)82,370	(f)	2,658	1,297	200	540	3,003	90,068
7. Royal Commissions and Select Committees—								
Fees of members ...	2,153	3,492	1,197	1,046	1,947	678	160	20,000
Other expenses of members ...	2,508	...	619	...	...	...	...	...
Miscellaneous ...	3,295	2,170	735	776	...	...	223	...
Total ...	7,956	5,662	2,551	1,822	1,947	678	383	20,999
GRAND TOTAL ...	311,288	171,288	91,416	61,869	44,048	60,740	24,496	765,145

(a) Including Lower House. (b) Included in Upper House. (c) Including Referenda. (d) Including expenses of Standing Committee on Public Works. (e) Including cost of elections. (f) Included in No. 5. (g) Members are allowed £1 a day when travelling. (h) Not available. Each member of both Houses has a pass for the whole of the State Railways. (i) Included in Premier's Office. (k) Exclusive of Queensland.

8. **Cost of Parliamentary Government per 1000 of Population.**—In the subjoined table particulars are given for some of the most important items of the cost of parliamentary government per 1000 of population for the year ended 30th June, 1913 :—

COST (a) OF PARLIAMENTARY GOVERNMENT PER 1000 OF POPULATION, 1912-13.

Particulars.	C'wlth.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
	£	£	£	£	£	£	£	£
1. <i>Governor-General or Governor</i> —								
Salary... ..	2.11	2.81	3.62	4.71	9.30	13.01	13.06	7.09
All other expenses	2.46	2.44	4.43	6.16	2.05	13.17	5.12	6.75
Total	4.57	5.25	8.05	10.87	11.35	26.18	18.18	13.84
2. <i>Executive Council</i>	0.02	0.06	0.50	0.50	...	1.29	...	0.35
3. <i>Ministry</i>	2.59	7.76	6.08	13.05	11.62	24.53	18.62	12.46
4. <i>Parliament</i> —								
A. <i>The Upper House:</i>								
Allowances and other ex-								
penses of members	4.42	...	...	...	7.69	31.35	11.46	7.63
Railway passes	(b) 1.95	3.29	0.74	(c)	1.67	0.79	3.80	3.76
B. <i>The Lower House:</i>								
Allowances and other ex-								
penses of members	8.23	22.88	12.30	32.84	16.46	51.93	17.84	30.48
Railway passes	(c)	5.45	1.41	(c)	3.72	1.01	6.34	3.02
C. <i>Miscellaneous:</i>								
Salaries of officers and staff	3.07	12.30	9.27	10.51	12.23	11.26	19.67	14.26
Printing and Hansard	5.59	10.23	7.75	13.35	18.50	18.59	8.96	16.74
Library	0.95	0.38	1.05	1.77	1.66	0.98	0.61	1.88
All other expenditure	2.27	5.32	2.58	3.72	6.29	12.96	2.20	7.03
Total Parliament	26.53	59.85	35.10	62.19	68.22	128.80	64.88	84.80
5. <i>Electoral Office</i>	12.93	20.15	12.68	5.75	6.20	12.93	5.44	26.60
6. <i>Cost of Elections</i>	17.40	(d)	1.96	2.00	0.46	1.76	15.29	19.03
7. <i>Royal Commissions and Select Committees</i>	1.68	3.18	1.85	2.86	4.52	2.21	1.94	4.44
GRAND TOTAL	65.72	96.25	66.22	97.22	102.37	197.70	124.35	161.52

(a) Cost expressed in pounds sterling and decimals of a pound, per 1000 of population. (b) Including Lower House. (c) Included in Upper House. (d) Included in No. 5. (e) Not available.

§ 2. Parliaments and Elections.

1. **Qualifications for Membership and for Franchise.**—The summary on pages 846-847 gives particulars as to the legislative chambers in the Commonwealth and State Parliaments, and shews concisely the qualifications necessary for membership and for the franchise in each House. Persons who are otherwise eligible, either as members or voters, are generally disqualified on the usual grounds of being of unsound mind or attainted of treason, being convicted of certain offences, and, as regards membership, on the grounds of holding a place of profit under the Crown, being pecuniarily interested in Government contracts, or being an undischarged bankrupt.

2. **The Federal Parliament.**—The Senate consists of thirty-six members, six being returned by each of the original federating States. Members of this chamber are elected for a term of six years, but by a provision in the Constitution a certain number retire at

the end of every third year, although they are eligible for re-election. In accordance with the Constitution the total number of members of the House of Representatives must be as nearly as possible double that of the Senate. In the House of Representatives the States are represented on a population basis, and the numbers stand at present as follows:—New South Wales, 27; Victoria, 21; Queensland, 10; South Australia, 7; Western Australia, 5; Tasmania, 5—total, 75. The Constitution provides for a minimum of five members in each original State. Members of the House of Representatives are elected for the duration of the Parliament, which is limited to three years. In elections for Senators each State is counted as a single electorate, but an elaborate scheme of subdivision had to be undertaken in order to provide workable electorates in each State for members of the House of Representatives. Members of both Houses are paid at the rate of £600 per annum. Further information regarding the Senate and the House of Representatives is given on pages 20 to 25 hereinbefore.

Particulars of Elections. There have been four complete Parliaments since the inauguration of Federation. The first Parliament was opened by His Royal Highness the Duke of Cornwall and York on 9th May, 1901, and was dissolved on 23rd November, 1903. The fifth Parliament began its second session on 15th April, 1914. Further information as to the Commonwealth Parliaments since their inception is given on page 832 hereinbefore. Since the establishment of the Commonwealth there have been five elections for the Senate and for the House of Representatives. The fifth Federal elections took place on 31st May, 1913, when, in addition to the ordinary voting, six proposed laws for the Alteration of the Constitution were submitted to the electors. These are referred to in detail on page 25 hereinbefore. Particulars regarding the number of electors enrolled and the number of electors to whom ballot-papers were issued at the last three elections may be found in the tables given hereunder:—

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906,
13th APRIL, 1910, AND 31st MAY, 1913.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males	Fem.	Total.	
THE SENATE.										
New South Wales	1903	360,285	326,764	687,049	189,677	134,487	324,364	52.70	41.16	47.21
	1906	392,077	345,522	737,599	229,654	151,682	381,336	58.57	43.90	51.70
	1910	444,269	390,393	834,662	301,167	211,635	512,802	67.79	54.21	61.44
	1913	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
Victoria ...	1903	302,069	310,403	612,472	171,839	141,648	313,487	56.89	45.63	51.18
	1906	335,886	336,168	672,054	200,252	171,933	381,185	62.30	51.14	56.72
	1910	346,050	357,649	703,699	245,666	232,869	468,535	70.99	62.32	66.58
	1913	407,892	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
Queensland	1903	127,914	99,166	227,080	79,938	44,569	124,507	62.49	44.94	54.83
	1906	150,037	121,072	271,109	79,567	44,972	124,539	53.03	37.14	45.94
	1910	158,436	120,595	279,031	101,570	66,064	167,634	66.00	54.78	61.15
	1913	206,727	156,355	363,082	163,350	117,145	280,525	79.03	74.92	77.26
South Australia ...	1903	85,947	81,828	167,775	36,736	19,049	54,785	41.58	23.28	32.65
	1906	97,454	95,664	193,118	43,318	27,199	70,517	44.45	28.43	36.51
	1910	105,501	102,354	207,655	63,384	47,119	110,503	60.19	46.03	53.22
	1913	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
Western Australia	1903	74,754	42,188	116,942	26,878	6,270	33,148	35.06	14.86	28.35
	1906	91,427	54,046	145,473	37,180	15,532	52,712	40.67	28.74	36.23
	1910	80,996	53,983	134,979	53,704	30,189	83,893	66.30	55.92	62.15
	1913	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
Tasmania	1903	43,515	38,753	82,268	23,729	13,292	37,021	54.53	34.30	45.00
	1906	47,306	42,903	90,209	29,164	19,715	48,879	61.65	45.95	54.18
	1910	51,731	46,725	98,456	33,339	24,070	57,609	64.83	51.51	58.51
	1913	54,856	51,890	106,746	43,539	36,839	80,398	79.37	71.03	75.32
Commonwealth	1903	994,484	899,102	1,893,586	527,997	359,315	887,312	53.09	39.96	46.86
	1906	1,114,187	995,375	2,109,562	628,135	431,033	1,059,168	56.38	43.30	50.21
	1910	1,186,783	1,071,699	2,258,482	802,030	601,946	1,403,976	67.58	56.17	62.16
	1913	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66

FEDERAL ELECTIONS OF 16th DECEMBER, 1903, 12th DECEMBER, 1906, 13th APRIL, 1910, AND 31st MAY, 1913—(Continued).

State.	Electors Enrolled.*			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors Enrolled.			
	Males.	Fem.	Total.	Males.	Fem.	Total.	Males.	Fem.	Total.	
THE HOUSE OF REPRESENTATIVES.*										
New South Wales	(1903	303,254	274,763	578,017	164,133	118,381	282,514	54.12	43.08	48.88
	1906	363,723	314,777	678,500	216,150	141,227	357,377	59.43	44.87	52.67
	1910	431,702	370,927	811,629	294,049	207,888	501,937	68.11	54.71	61.81
	1913	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
Victoria ...	(1903	241,134	247,089	488,223	142,460	130,320	262,789	59.08	48.70	53.83
	1906	335,886	336,168	672,054	209,266	171,969	381,235	62.90	51.16	56.73
	1910	346,050	357,649	703,699	245,663	222,869	468,532	70.99	62.32	66.58
	1913	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
Queensland	(1903	114,550	88,375	202,925	74,042	41,689	115,731	64.64	47.17	57.03
	1906	150,037	121,072	271,109	79,540	44,942	124,482	53.01	37.12	45.92
	1910	158,436	120,595	279,031	104,370	66,064	170,434	66.00	54.78	61.15
	1913	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.92	77.26
South Australia ...	(1903	29,856	25,789	49,645	12,394	7,728	20,122	51.95	29.97	40.53
	1906	42,065	38,578	80,643	19,650	12,669	32,319	47.19	32.84	40.32
	1910	59,581	61,594	121,175	37,189	29,872	67,061	62.42	48.47	55.33
	1913	90,009	85,304	175,313	74,316	65,704	140,020	82.57	77.02	79.67
Western Australia	(1903	41,500	28,324	69,824	16,824	4,406	21,230	40.34	15.57	30.41
	1906	91,427	54,046	145,473	36,976	15,740	52,716	40.44	29.12	36.24
	1910	80,966	53,983	134,949	51,704	30,189	81,893	66.30	55.92	62.15
	1913	87,570	62,088	149,658	65,754	44,310	110,064	75.09	71.37	73.93
Tasmania	(1903	43,515	38,758	82,268	23,729	13,284	37,013	54.53	34.28	44.99
	1906	37,779	34,839	72,618	23,753	16,441	40,194	62.37	47.19	55.35
	1910	51,731	46,725	98,456	33,539	24,070	57,609	64.83	51.51	58.51
	1913	54,856	51,890	106,746	43,539	36,839	80,378	79.37	71.03	75.32
Commonwealth	(1903	767,809	703,093	1,470,902	433,582	305,820	739,402	56.47	43.50	50.27
	1906	1,020,917	899,480	1,920,397	585,535	403,018	988,553	57.35	44.81	51.48
	1910	1,128,496	1,020,473	2,148,969	768,714	580,912	1,349,626	68.12	56.93	62.80
	1913	1,401,042	1,260,335	2,661,377	1,078,997	876,726	1,955,723	77.01	69.56	73.49

* For the House of Representatives the number of electors enrolled in contested divisions only is given.

In the Senate the figures for the year 1906 shew that ballot-papers were issued to 50.21 per cent. of the electors, and are a slight improvement on those for the year 1903, when only about 47 per cent. of the electors visited the polls. There was, however, a substantial increase in the number of electors who voted at the 1910 elections, 62.16 per cent. of the persons on the rolls exercising the franchise. The elections of 1913 also shewed a gratifying increase over those of 1910, no less than 73.49 per cent. of the persons on the rolls exercising their right to vote. It will be seen from the foregoing table that the electors of the Commonwealth are beginning to set a higher value on the privilege of the franchise. The percentage of female voters in 1913, while still considerably below that of the males, shows a marked increase (over 13 per cent.) on that of female voters in 1910.

3. **Commonwealth Referenda, 26th April, 1911.**—Two proposed laws for the alteration of the Constitution were submitted to the people for acceptance or rejection on the 26th April, 1911. They were (A) The Constitution Alteration (Legislative Powers) 1910, and (B) the Constitution Alteration (Monopolies) 1910. If, in a majority of the States, a majority of the electors voting approve the proposed laws, and if a majority of all the electors voting also approve them, they are presented to the Governor-General for the King's assent. Particulars of the alterations proposed have already been given (see page 25).

Results of the Referenda of 1911 are given in the following table, which shews the number of electors enrolled, electors to whom ballot papers were issued, and the number of votes in favour of, and against, each of the proposed laws, and, as will be seen, neither of the proposed laws was approved by the people.

**COMMONWEALTH REFERENDA (LEGISLATIVE POWERS AND MONOPOLIES),
TAKEN ON 26th APRIL, 1911.**

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Legislative Powers.		Monopolies.	
							Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.	Total Number of Votes given in favour of the Prop's'd Law.	Total Number of Votes given not in favour of the Prop's'd Law.
N.S.W. ...	461,196	406,998	868,194	233,668	150,520	384,188	135,968	240,605	138,237	238,177
Victoria ...	355,381	367,996	723,377	236,194	212,372	448,566	170,288	270,390	171,453	268,743
Q'land ...	167,725	125,278	293,003	101,245	60,890	162,135	69,552	89,420	70,259	88,472
S.Aust. ...	110,217	105,810	216,027	72,761	61,041	133,802	50,358	81,904	50,835	81,479
W.Aust. ...	83,850	54,847	138,697	42,538	18,884	61,422	33,043	27,185	33,592	26,561
Tas. ...	54,008	48,318	102,326	33,103	24,950	58,053	24,147	33,200	24,292	32,960
Totals for C'wealth	1,232,377	1,109,247	2,341,624	719,569	528,657	1,248,226	483,356	742,704	488,668	736,392

4. **Commonwealth Referenda, 31st May, 1913.**—At the general elections that took place on 31st May, 1913, the question of altering the Constitution so as to extend the powers of the Commonwealth was again submitted to the people. The particulars of the proposed laws have been given on page 25 hereinbefore. The results of the Referenda of 1913 are given below, and, as will be seen, none of the proposed laws was approved by the electors.

COMMONWEALTH REFERENDA (LEGISLATIVE POWERS) TAKEN ON 31st MAY, 1913.

State.	Electors Enrolled.			Electors to whom Ballot Papers were Issued.			Percentage of Voters to Electors En- rolled.		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
New South Wales ...	554,028	482,159	1,036,187	405,152	312,703	717,855	73.13	64.85	69.28
Victoria ...	407,852	422,539	830,391	326,856	300,005	626,861	80.14	71.00	75.49
Queensland ...	206,727	156,355	363,082	163,380	117,145	280,525	79.03	74.92	77.26
South Australia ...	124,222	119,804	244,026	103,739	91,724	195,463	83.51	76.56	80.10
Western Australia ...	106,264	73,520	179,784	80,011	52,138	132,149	75.29	70.92	73.50
Tasmania ...	54,856	51,890	106,746	43,539	36,859	80,398	79.37	71.08	75.32
Totals for C'wealth	1,453,949	1,306,267	2,760,216	1,122,677	910,574	2,033,251	77.22	69.71	73.66

The following table shews the number of votes cast for and against each of the proposed laws in each of the States:—

**COMMONWEALTH REFERENDA, 31st MAY, 1913.—RESULTS OF VOTING ON
EACH PROPOSED LAW.**

State.	Trade and Commerce.		Corporations.		Industrial Matters.		Railway Dis- putes.		Trusts.		Nationalisa- tion of Monopolies.	
	Votes in Favour of Pro- posed Law.	Votes not in Favour of Pro- posed Law.	Votes in Favour of Pro- posed Law.	Votes Not in Favour of Pro- posed Law.	Votes in Favour of Pro- posed Law.	Votes Not in Favour of Pro- posed Law.	Votes in Favour of Pro- posed Law.	Votes Not in Favour of Pro- posed Law.	Votes in Favour of Pro- posed Law.	Votes Not in Favour of Pro- posed Law.	Votes in Favour of Pro- posed Law.	Votes Not in Favour of Pro- posed Law.
N.S.W. ...	317,848	359,418	317,668	361,255	318,622	361,044	316,928	361,743	319,150	358,155	301,192	341,724
Victoria ...	297,290	307,975	298,479	308,915	297,892	309,804	296,255	310,921	301,729	305,268	287,379	298,326
Q'land ...	146,187	122,813	146,996	123,632	147,171	123,554	146,521	123,859	147,871	122,088	139,019	117,609
S. Aust. ...	96,065	91,144	96,360	91,273	96,626	91,361	96,072	91,262	96,400	90,185	91,411	86,915
W. Aust. ...	66,349	59,181	66,595	59,445	66,451	59,612	65,957	59,965	67,342	58,312	64,988	57,184
Tasmania ...	34,660	42,084	34,724	42,304	34,889	42,236	34,625	42,296	34,839	41,935	33,176	40,189
Totals	958,419	982,615	960,711	986,824	961,601	987,611	956,358	990,046	967,331	975,943	917,165	941,947

5. **The Parliament of New South Wales.**—The Legislative Council is in this State a nominee chamber, the Legislative Assembly being an elective body. Theoretically the Legislative Council may contain an unlimited number of members, but in practice the number is restricted to about sixty, the members at the latest available date being fifty-six. The tenure of the seat is for life; four-fifths of the members must be persons not holding any paid office under the Crown, but this is not held to include officers of His Majesty's sea or land forces on full or half pay, or retired officers on pensions. The Legislative Assembly consists of ninety members, who hold their seats during the existence of the Parliament to which they are elected. The duration of any single Parliament is limited to three years.

Particulars of Elections. Since the introduction of responsible government in New South Wales there have been twenty-two complete Parliaments, the first of which opened on the 22nd May, 1856, and was dissolved on the 19th December, 1857, while the twenty-second opened on the 15th November, 1910, and closed on the 6th November, 1913. The average duration of the Parliaments was two years and five months. The first session of the twenty-third Parliament was opened on the 23rd December, 1913. Particulars of voting at the last seven elections are given below:—

LEGISLATIVE ASSEMBLY ELECTIONS, NEW SOUTH WALES, 1894 to 1913.

Date of Opening of Parliament.	Electors upon the Roll.	Members Returned.	Members Unopposed.	Contested Electorates.			
				Electors upon the Roll.	Votes Recorded.	Percentage of Votes Recorded.	Percentage of Informal Votes
7th August, 1894	298,817	125	1	254,105	204,246	80.38	1.62
13th " 1895	267,458	125	8	238,233	153,034	64.24	0.88
16th " 1898	324,339	125	3	294,481	178,717	60.69	0.92
23rd July, 1901	346,184	125	13	270,861	195,359	72.13	0.79
23rd August, 1904	Males 363,062	90	2	304,396	226,057	74.26	0.59
	Females 326,428			262,433	174,538	66.51	
2nd October, 1907	Males 392,845	90	5	370,715	267,301	72.10	2.87
	Females 353,055			336,680	204,650	60.78	
15th Nov., 1910...	Males 458,626	90	3	444,242	322,129	72.53	1.78
	Females 409,069			400,139	262,154	65.52	
23rd Dec., 1913...	Males 553,633	90	3	534,379	385,524	72.14	1.57
	Females 484,366			468,437	298,828	63.79	

The franchise was extended to women in 1902, and was exercised for the first time at a State election in 1904.

6. **The Parliament of Victoria.**—Both of the Victorian legislative chambers are elective bodies, but there is a considerable difference in the number of members of each House, as well as in the qualifications necessary for members and electors. The number of members in the Upper House in March, 1914, was 34, and in the Lower House, 65. In the Legislative Council the tenure of the seat is for six years, but one member for each province retires every third year, except in the case of a dissolution, when one half of the newly elected members hold their seats for three years only. Members of the Legislative Assembly are elected for the duration of Parliament, which is limited to three years. The franchise was extended to women by the "Adult Suffrage Act, 1908." An elector for the Legislative Assembly may only vote once, plurality of voting having been abolished in 1899; an elector, however, qualified in more than one district, may select that for which he desires to record his vote. The preferential system of voting (see Section Miscellaneous hereinafter) was for the first time adopted in Victoria at the election held in November, 1911.

Particulars of Elections. Since the introduction of responsible government in Victoria there have been twenty-two complete Parliaments, the first of which was opened on the 21st November, 1856, and closed on the 9th August, 1859, while the twenty-second opened on the 7th January, 1909, and closed on the 24th October, 1911. The third session of the twenty-third Parliament opened on the 2nd July, 1913, and terminated on the 13th February, 1914.

Statistics regarding the elections that have been held since 1901 will be found below:—

PARTICULARS OF VICTORIAN ELECTIONS, 1902 to 1913.

Year.	Legislative Council.				Legislative Assembly.			
	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts	Per-centage.	Electors on Roll.	Electors in Contested Districts.	Voters in Contested Districts.	Per-centage
1902 ...	134,087	*	*	*	290,241	216,063	141,471	65.47
1904 ...	172,526	104,865	66,182	63.11	264,709	223,600	149,192	66.72
1907 ...	180,738	78,512	27,152	34.58	261,088	191,131	117,098	61.26
1908 ...	185,234	*	*	*	263,876	164,919	88,461	53.64
1910 ...	240,520	136,479	40,053	35.21	487,661	*	*	*
1911 ...	249,481	*	*	*	701,451	619,644	394,189	63.61
1912 ...	258,742	*	*	*	667,983	*	*	*
1913 ...	270,175	99,646	47,719	47.89	670,775	*	*	*

* Not contested.

As the table shews, the proportion of voters for the Legislative Council is considerably less than that for the Legislative Assembly. The number of persons who voted by post at the elections for the Legislative Assembly in 1911 was 12,362.

7. The Parliament of Queensland.—No limit is set by the Constitution Act to the number of members of the Legislative Council of Queensland, the total at the latest available date being forty. Members are appointed by the State Governor, and it is provided that not less than four-fifths of the members must consist of persons not holding any office under the Crown, except officers of His Majesty's sea or land forces on full or half-pay, or retired officers on pensions. The members are nominated for life. By "The Electoral Districts Act of 1910" the Legislative Assembly is composed of seventy-two members, and the State is now divided into that number of electoral districts, and the General Election which took place in 1912 was in conformity with this new Act.

Particulars of Elections. Since the establishment of responsible government in Queensland there have been eighteen complete Parliaments, the first of which opened on the 29th May, 1860, and dissolved on the 20th May, 1863, while the eighteenth Parliament opened on 2nd November, 1909, and closed on 9th January, 1912. The nineteenth Parliament opened on the 2nd July, 1912. Statistics regarding the last six elections are given below:—

ELECTIONS FOR QUEENSLAND LEGISLATIVE ASSEMBLY, 1902 to 1912.

Year,	Number of Seats.	Number of Candidates Nominated.	Candidates sent to the Poll.	Electors Enrolled.			Electors who Voted.			Percentage of Electors Voting in Contested Electorates.		
				Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
1902	72	159	154	108,548	...	108,548	80,076	...	80,076	78.88	...	78.88
1904	72	140	117	103,943	...	103,943	60,265	...	60,265	74.16	...	74.16
1907	72	185	179	125,140	95,049	220,189	...	...	152,049	73.42	68.64	71.61
1908	72	137	125	117,385	88,507	205,892	77,632	61,115	138,747	66.13	69.05	67.39
1909	72	145	133	135,841	106,913	242,754	89,609	66,809	156,418	75.34	69.36	72.67
1912	72	144	139	173,801	135,789	309,590	122,844	95,795	218,639	75.92	75.02	75.52

The election of 1907 was the first State election in Queensland at which women voted, the privilege being conferred under Act 5 Edw. VII., No. 1. Some of the returns did not separate the sexes in the figures respecting the number of electors who voted, and the percentage of males and females was therefore calculated on the total returns where the subdivision was made.

8. **Parliament of South Australia.**—In this State there is a Legislative Council composed of eighteen members and a House of Assembly with forty members, both chambers being elective. Under the Constitution Amendment Act 1908, the State of South Australia was divided into four Council Districts, of which one returns six members, and the other three return four members each, to the Legislative Council, but under the Constitution Further Amendment Act of 1913, the State is now divided into five Districts, which will in future return four members each, a total of twenty members instead of eighteen as now. For the purpose of electing members of the House of Assembly the State was divided into twelve electoral districts, but under the Act of 1913 mentioned above, the State has been divided into nineteen Districts, which will return forty-six members instead of forty as hitherto. The former districts returned five members from one district, four members from two, and three each from the balance. Under the new Act, eight districts will in future return three members each, and eleven districts two members each.

Particulars of Elections. Since the inauguration of responsible government in South Australia there have been twenty complete Parliaments, the first of which was opened on the 22nd April, 1857, and dissolved on the 1st September, 1859, while the twentieth was opened on the 2nd June, 1910, and terminated on the 16th January, 1912. The first session of the twenty-first Parliament opened on the 19th March, 1912. Particulars of voting at the last five elections are given below:—

PARLIAMENTARY ELECTIONS IN SOUTH AUSTRALIA, 1900 to 1912.

Year.	Electors on Rolls.			Electors Who Voted.			Percentage of Electors Voting.	
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
LEGISLATIVE COUNCIL.								
1900	38,688	9,854	48,542	21,403	3,907	25,310	55.32	39.65
1902	38,413	13,496	51,909	29,978	7,940	37,918	73.04	58.83
1905	39,011	13,873	52,884	28,820	8,328	37,148	73.88	60.03
1910	48,145	16,157	64,302	32,340	9,356	41,696	67.59	57.91
1912	59,228	19,985	79,213	40,709	13,016	53,725	80.91	72.56
LEGISLATIVE ASSEMBLY.								
1902	77,147	72,030	149,177	53,471	36,545	90,016	62.14	49.22
1905	95,396	92,249	187,645	64,330	50,246	114,576	67.43	54.47
1906	96,724	93,438	190,162	60,109	45,997	106,106	69.31	50.73
1910	94,656	88,762	183,418	73,464	56,830	130,294	77.61	64.03
1912	117,440	106,971	224,411	87,530	73,732	161,262	74.53	68.93

The proportions of votes recorded to total persons entitled to vote in each of the five years given above were as follows:—Legislative Council, 52.14, 73.05, 70.24, 77.64, and 78.71 per cent.; and Legislative Assembly, 60.34, 61.06, 55.80, 71.04, and 71.86 per cent.

It is interesting to note that South Australia was the first of the States to grant women's suffrage (under Act No. 16 of 1894), the franchise being exercised for the first time at the Legislative Assembly election on the 25th April, 1896.

9. Parliament of Western Australia.—In this State both chambers are elective. For the Legislative Council there are thirty members, each of the ten electorates returning three members, while the Legislative Assembly is composed of fifty members, one member being returned by each of the fifty electoral divisions. At the expiration of two years from the date of election to a seat in the Legislative Council, and every two years thereafter, the senior member for the time being for each province retires. Seniority is determined (a) by date of election, (b) if two or more members are elected on the same day, then the senior is the one who polled the least number of votes, (c) if the election be uncontested, or in case of an equality of votes, then the seniority is determined by the alphabetical precedence of surnames and, if necessary, Christian names. Members of the Legislative Assembly are elected for three years.

Particulars of Elections. Since the establishment of responsible government in Western Australia there have been seven complete Parliaments, the first of which was opened on the 30th December, 1890, and was dissolved on the 1st June, 1894, while the seventh Parliament was opened on the 10th November, 1908, and closed on the 3rd February, 1911. The first session of the eighth Parliament commenced on the 1st November, 1911. Particulars relating to the last five Assembly and three Council elections are given in the tables below.

PARLIAMENTARY ELECTIONS, WESTERN AUSTRALIA, 1901 to 1912.

Year.	Electors on the Roll.			In Contested Districts.			Votes Recorded.			Percentage of Electors Voting.		
	Males.	F.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.

LEGISLATIVE ASSEMBLY.

1901	74,874	16,648	91,522	67,967	14,775	82,742	29,982	8,255	38,087	44	56	46
1904	108,861	54,965	163,826	88,524	49,791	138,315	43,285	23,500	66,785	49	47	48
1905	79,025	42,697	121,722	65,296	36,706	102,002	33,482	19,435	52,917	51	53	52
1908	83,060	52,919	135,979	69,277	44,804	114,081	46,411	29,412	75,823	67	66	66
1911	91,514	60,891	152,645	71,675	50,700	122,375	53,355	38,281	91,636	74	75	75

LEGISLATIVE COUNCIL.

1908	29,255	6,543	35,798	19,233	4,508	23,741	10,210	2,283	12,493	53	51	52
1910	31,983	7,553	39,536	31,290	7,495	38,785	12,020	2,461	14,481	38	33	35
1912	36,716	10,437	47,153	33,490	9,818	43,308	20,733	5,552	26,285	62	57	59

10. Parliament of Tasmania.—In Tasmania there are two legislative chambers—the Legislative Council and the House of Assembly, both bodies being elective. The Council consists of eighteen members, returned from fifteen districts, Hobart returning three, Launceston two, and the remaining thirteen districts sending one member each. For the Parliament which expired in March, 1909, there were thirty-five House of Assembly districts, each district returning one member, but, in accordance with the Constitution Amendment Act of 1906, upon the expiration of the last Assembly, either by dissolution or by effluxion of time, there are now five House of Assembly districts, viz., the Commonwealth electoral districts, each district returning six members. This latter system came into force at the 1909 elections.

PARLIAMENTS AND ELECTIONS—

Particulars.	Commonwealth.	New South Wales.	Victoria
1. Senate and Legislative Councils.			
<i>Number of Members</i> ...	36	56. May not be less than 21	34
<i>Qualification for Membership</i> ...	Adult British subjects natural-born or naturalised for 5 years, if (a) eligible to vote at the elections for the Senate, and (b) resident for at least 3 years within the Commonwealth	Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects of the age of 30 years or upwards, (a) if possessed of a freehold property of the annual value of at least £50 for one year previous to the election, and (b) in the case of naturalised subjects if a resident of the State for 10 years
<i>Period for which elected or nominated</i> ...	6 years	For life	6 years
<i>Allowance to Members</i> ...	£600 each per annum	None	None
<i>Qualification for Franchise</i>	Adult British subjects of either sex who have lived in Australia for 6 months continuously. Aboriginal natives of Australia, Asia, Africa, or the islands of the Pacific, except New Zealand, cannot vote at federal elections unless they have acquired a right to vote at elections for the Lower House of a State Parliament	(Nominated)	Adult British subjects of either sex, if either (a) the owner of a freehold of the annual value of £10 or of a leasehold of property rated at £15, or (b) a graduate of a British university, matriculated students of Melbourne University, qualified legal and medical practitioners, ministers of religion, certificated schoolmasters, and naval and military officers. Naturalised subjects must be of 3 years' standing, and must have resided in the State for 12 months
2. House of Representatives, Legislative Assemblies, etc.			
<i>Number of Members</i> ...	75	90	65
<i>Qualification for Membership</i> ...	The same as for the Senate	Male adult British subjects if qualified to vote at an election of members of the Legislative Assembly, unless disqualified under the Constitution Acts or the Federal Elections Act 1900	Male adult natural-born British subjects or aliens naturalised for the period of 5 years, if resident in the State for not less than 2 years
<i>Period for which elected</i> ...	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
<i>Allowance to Members</i> ...	£600 each per annum	£500 each per annum	£300 each per annum
<i>Qualification for Franchise</i>	The same as for the Senate	Adult naturalised subjects of either sex, who have resided in the Commonwealth for 6 months and in the State continuously for 3 months after naturalisation, and adult natural-born subjects who have resided in the Commonwealth for 6 months and in the State for a continuous period of 3 months	Adult natural-born or naturalised subjects of either sex who have resided in the State for a continuous period of 6 months. An elector may be enrolled in (a) the electorate in which he resides, and (b) in an electorate in which he is a freeholder or holder of an unexpired lease, provided that no elector can be on more than 2 rolls. He may vote in which district he chooses, but not in both.

SUMMARY, MARCH, 1914.

Queensland.	South Australia.	Western Australia.	Tasmania.
40	20	30	18
Male adult natural-born or naturalised British subjects	Male natural-born or naturalised British subjects if (a) of the age of 30 years or upwards, and (b) if resident in the State for 3 years	Male natural-born or naturalised British subjects of the age of 30 years or upwards, if (a) in the case of natural-born subjects, resident in the State for 2 years, and (b) in the case of naturalised subjects, if naturalised for 5 years previous to the election and resident in the State during that period	Male British subjects, either natural-born or for at least 5 yrs. naturalised, of not less than 30 years of age, qualified to vote at the election for the Legislative Council, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election
For life	6 years	6 years	6 years
None	£200 each per annum	£300 each per annum	£150 each per annum
(Nominated)	Adult British subjects of either sex who are either (a) owners of a freehold of the clear value of £50, (b) owners of a leasehold of the clear annual value of £20, with at least 3 years to run or containing a right of purchase, (c) occupiers of a dwelling-house of the clear annual value of £25, (d) occupiers of a dwelling home, and paying not less than £17 yearly rental, (e) registered proprietors of a Crown lease on which there are improvements to the value of at least £50, (f) resident postmasters, stationmasters, and police, in charge of their respective offices or stations, (g) ministers of religion. Voters must have resided in State for 6 months prior to enrolment	Adult British subjects of either sex who have resided in the State for 6 months, and who either (a) own a freehold estate to the value of £50, (b) occupy a house or own leasehold property rated at £17, (c) hold Crown leases or licenses to the value of not less than £10 per annum, or (d) are on the electoral list of a municipality or road-board district in respect of property of the annual value of £17. Aboriginal natives may only acquire the franchise in respect of a freehold qualification	Adult British subjects of either sex who have resided in the State for 12 months, if either (a) possessing freehold to the annual value of £10 or leasehold to the value of £30, or (b) graduates of a British university, qualified legal or medical practitioners, officiating ministers of religion, or retired naval or military officers
72	46	50	30
All persons qualified and registered to vote at the election of members of the Legislative Assembly are eligible as members	Any person qualified for the franchise of the House of Assembly is eligible for membership	Male adult British subjects, if resident in the State for 12 months. Naturalised subjects must have been naturalised for 5 years and have resided in the State for 2 years previous to the election	Male adult British subjects, either natural-born or for at least 5 years naturalised, qualified to vote at the election for the House of Assembly, and who have resided in Tasmania for any continuous period of 5 years, or for a period of 2 years immediately preceding the election.
Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years	Duration of Parliament, which is limited to 3 years
£300 each per annum and £2 per month for postage and telegrams	£200 each per annum	£300 each per annum	£150 each per annum
Adult British subjects of either sex who either (a) have resided in Queensland for 12 months continuously and whose names are on the electoral roll, (b) own freehold estate of the value of £100, (c) have occupied a house of the annual value of £10 for at least 6 months, or (d) have a leasehold estate in possession of the annual value of £20 with not less than 18 months to run.	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously.	Adult natural-born or naturalised subjects of either sex who have resided in the State for 6 months continuously and for a continuous period of 1 month in district	Adult natural-born or naturalised subjects of either sex who have resided in Tasmania for 6 months continuously.

Particulars of Elections. The first Tasmanian Parliament opened on 2nd December, 1856, and closed on 8th May, 1861. There have been eighteen complete Parliaments since the inauguration of responsible government, the last one opening on 12th April, 1913, and dissolving on 27th December, 1913. The nineteenth Parliament opened on 25th March, 1914. Particulars of the voting at the last six elections are given hereunder:—

ELECTIONS, HOUSE OF ASSEMBLY, TASMANIA, 1900 to 1913.

Year.	Electors on Roll.		Electors in Contested Districts.		Votes Recorded.		Percentage of Electors Voting	
	Males	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1900 ...	39,002	...	29,022	...	18,872	...	65.02	...
*1903 ...	43,999	...	40,267	...	23,766	...	59.87	...
†1906 ...	47,400	41,629	37,120	33,415	23,128	17,194	62.30	51.46
†1909 ...	50,221	45,563	50,221	45,563	30,509	19,893	60.74	43.67
†1912 ...	52,853	50,660	52,853	50,660	40,713	35,387	77.03	69.73
†1913 ...	53,372	51,920	53,372	51,920	38,700	32,102	72.51	61.53

* Manhood suffrage, Act 64 Vic., No. 5. † Universal adult suffrage, Act 3 Edward VII., No. 13.

§ 3. Administrative Government.

In each State, as well as in the Commonwealth, the Government is administered by a number of chief departments, on lines similar to those on which administrative government is carried on in the United Kingdom. Reference has already been made to the creation of the Commonwealth Departments (see pages 692 and 693). In the States the number and functions of the administrative departments vary considerably. This matter has also been referred to hereinbefore (see page 712). In many cases more than one department is under the control of a single Minister. The tabular statement given on this page and on the following pages shews the sub-departments, branches, etc., of each Ministerial Department in the Commonwealth and in each State, together with the Acts administered and other more important matters dealt with.

COMMONWEALTH ADMINISTRATIVE GOVERNMENT, 1914.

Departments, Sub-departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Prime Minister's— (a) Auditor-General. (b) Public Service Commissioner (as from 1st July, 1912).	Arbitration (Public Service), Commonwealth Public Service (as from 1st July, 1912), Commonwealth Salaries, Parliamentary Allowances, Petherick Collection, Royal Commissions.	Auditor-General and Staff, Communication with the Governor-General, Communication with the States, Officers of the Parliament, Public Service Commissioner and Staff, Royal Commissions, <i>The Commonwealth of Australia Gazette</i> , the Federal Executive Council.
2. Attorney-General's— (a) Crown-Solicitor. (b) High Court. (c) Patents, Copyright, Designs, and Trade Marks.	Acts Interpretation, Amendments Incorporation, Bills of Exchange, Commonwealth Conciliation and Arbitration, Copyright, Designs, Evidence, Extradition, High Court Procedure, Judiciary, Jury Exemption, Parliamentary Papers, Patents, Trade-marks and Designs, Rules Publication, Service and Execution of Process, State Law and Records Recognition, Statutory Declarations.	Bankruptcy and Insolvency. Bills of Exchange and Promissory Notes, Conciliation and Arbitration, Copyright, Crown Law Offices, Designs, Divorce and Matrimonial Cases, Foreign Corporations, Judiciary and Courts, Marriage, Patents, Parliamentary Drafting, Recognition throughout Commonwealth of State laws, records, and judicial proceedings, Service and Execution throughout Commonwealth of State process and judgments, Trade-marks, Trading and Financial Corporations formed within the limits of the Commonwealth.

COMMONWEALTH—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
3. Home Affairs— (a) Bureau of Census and Statistics. (b) Electoral Office. (c) Lands and Surveys. (d) Meteorological Office. (e) Public Works. (f) Public Service Commissioner (until 1st July, 1912).	Census and Statistics, Commonwealth Public Service (until 1st July, 1912), Commonwealth Electoral, Commonwealth Franchise, Constitution Alteration (Senate Elections), Disputed Elections and Qualifications, Electoral Divisions, Electoral Validating, Governor-General's Residences, Kalgoorlie to Port Augusta Railway, Lands Acquisition, Meteorology, Referendum (Constitution Alteration), Representation, Seat of Government, Seat of Government Acceptance, Seat of Government (Administration), Senate Elections.	Astronomy, Census and Statistics, Elections, Franchise, Lands, Meteorology, Public Service Commissioner (until 1st July, 1912), Public Works, Railways, Representation of the People, Rivers, Seat of Government, Surveys.
4. Treasury— (a) Land Tax and Assessment. (b) Old Age Pensions. (c) Maternity Bonus.	Appropriation, Audit, Australian Notes, Bank Notes Tax, Coinage, Commonwealth Bank, Commonwealth Inscribed Stock, Constitution Alteration (State Debts), Invalid and Old-Age Pensions, Land Tax, Land Tax Assessment, Life Assurance (Companies), Loan Act, Marine Insurance, Maternity Bonus, Supply, Surplus Revenue, Tasmania Grant, Trust Fund Advances.	Appropriation and Supply, Assistance to States, Banking, Currency, Coin and Legal Tender, Government Printer, Insurance, Invalid and Old-Age Pensions, Maternity Bonus, Public Loans, Public Moneys, State Debts, Taxation (other than duties of Customs and of Excise).
5. Trade and Customs— (a) Customs and Excise. (b) Fisheries. (c) Navigation. (d) Quarantine.	Australian Industries Preservation, Beer Excise, Bounties, Commerce (trade descriptions), Customs, Customs (Inter-State Accounts), Customs Tariff, Distillation, Excise, Excise Procedure, Excise Tariff, Lighthouse, Manufactures Encouragement, Quarantine, Sea-carriage of Goods, Seamen's Compensation, Secret Commissions, Shale Oils Bounties, Spirits, Sugar Bounty.	Bounties, Bureau of Agriculture, Customs and Excise, Fisheries (other than Pearl Shell or Trepang) in Australian waters beyond territorial limits, Inter-State Commission, Lighthouses, Lightships, Beacons and Buoys, Quarantine, Trade and Commerce (including Navigation and Shipping), Weights and Measures.
6. External Affairs— (a) Advertising and Immigration. (b) High Commissioner's Office. (c) Northern Territory. (d) Papua.	Contract Immigrants, Emigration, High Commissioner, Immigration Restriction, Naturalisation, Northern Territory Acceptance, Northern Territory (Administration), Pacific Island Labourers, Papua.	Consular Appointments, External Affairs, Pearl Shell and Trepang Fisheries in Australian waters beyond territorial limits, High Commissioner, Immigration and Emigration, Influx of Criminals, Naturalisation and Aliens, Passports, People of Races (other than the Aboriginal races in any State) for whom it is deemed necessary to make special laws, Relations with the Pacific Islands, Territories of the Commonwealth.
7. Defence— (a) Military Board (b) Naval Board	Defence, Naval Agreement, Naval Defence.	Control of Railways with respect to transport for Naval and Military purposes, Naval and Military Defence, Naval and Military Factories and Workshops.
8. Postmaster-General's—	Pacific Cable, Post and Telegraph, Post and Telegraph Rates, Purchase Telephone Lines Acquisition, Telegraph, Wireless Telegraphy.	Postal, Telegraph and other like services.

NEW SOUTH WALES.—ADMINISTRATIVE GOVERNMENT, 1914.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Premier's Office— (a) Governor's Establishment. (b) Agent-General. (c) Immigration & Tourist Bureau.	...	Is charged with—Departmental business connected with the Houses of Parliament (including official publication of debates), foreign correspondence, correspondence with Colonial, Commonwealth, and State Governments, the Agent-General and with Immigration matters, and Norfolk Island.
2. Chief Secretary— (a) Executive Council. (b) Audit Dept. (c) Police Dept. (d) Inspector-General of Insane. (e) Public Health Dept. (f) Master in Lunacy. (g) Medical Board. (h) State Fisheries. (i) Aborigines Protection Board. (j) Board of Fire Commissioners. (k) Electoral Office. (l) Registry of Friendly Societies & Trade Unions. (m) Bureau of Statistics. (n) Dental Board. (o) Meat Industry and Abattoirs Board. State Bakery.	Parliamentary Electorates and Elections, Lunacy, Audit, Banks and Bank Holidays, Birds Protection, Bread, Building and Co-operative Societies, Sunday Closing, Careless Use of Fire, Constitution, Dentists, Destitute Children's Society, Diseased Animals and Meat, Dog and Goat, Fire Brigades, Fisheries, Friendly Societies, Gaming and Betting, Inebriates, Medical Practitioners, Metropolitan Traffic, Native Animals Protection, Native Dogs Destruction, Noxious Trades, Obscene Publications, Police Offences, Police Regulation, Printing, Public Entertainments, Public and Private Hospitals, Public Health, Sydney Corporation, Vagrancy, Weights and Measures, Pure Food, Theatres, etc., Cattle Slaughtering, etc., Dairies Supervision, Juvenile Smoking Suppression, Motor Traffic, Aborigines Protection, Influx of Criminals Prevention.	Is charged with—the public seal, execution of capital sentences, appointment of magistrates, the police, public health, issue of theatrical & racecourse licenses, care and treatment of insane and inebriates, hospitals & charitable institutions, business relating to ecclesiastical establishments, supervision of dairies, general elections, franchise, statistics, and all matters of business not expressly assigned to any other department.
3. Treasury— (a) Stamp Duties Office. (b) Taxation Dept. (c) Government Printing Office. (d) Explosives Dept. (e) Shipping Offices, Sydney and Newcastle. (f) Navigation Dept. (g) Resumed Properties Office. (h) Stores Supply Department. The following departments are connected with the Treasury though administered by Commissioners:— (a) Government Railways and Tramways. (b) Sydney Harbour Trust. (c) Government Savings Bank.	Stamp Duties, Land & Income Tax, Merchant Shipping, Navigation, Wharfage and Tonnage Rates, Government Railways, Railways Commissioners Appointments, Sydney Harbour Trust, Government Savings Bank, Pharmacy, Explosives.	Finance, management of Consolidated Revenue, public works, closer settlement, Treasury guarantee, and general loan funds, also of public debt, resumed properties, payment of Imperial and State pensions, purchase and issue of stores, Govt. printing office, Govt. railways and tramways, Sydney Harbour Trust, navigation and shipping, storage and issue of explosives, engagement and discharge of seamen in British and colonial vessels, tenders and contracts for public supplies, etc., State clothing factory.
4. Dept. of Attorney-General and of Justice— (a) Prothonotary & Registrar in Divorce. (b) Master in Equity. (c) Sheriff. (d) Registrar in Bankruptcy. (e) Registrar of Probates, etc. (f) Crown Solicitor. (g) Parliamentary Draftsman. (h) Clerk of the Peace. (i) Registrar of Sydney District Court. (j) Registrar-General. (k) City Coroner. (l) Children's Court. (m) Petty Sessions. (n) Police Magistrates, Clerks of Petty Sessions and Registrars of District Courts. (o) Prisons Department. (p) Public Service Board.	Auctioneers, Bankruptcy, Billiards, Companies, Contractors' Debts, Coroners, Crimes, Criminal Appeal, District Courts, Fines and Penalties, Habitual Criminals, Hawkers and Pedlars, Interstate Debts, Jury, Justices, Legal Process, Liens on Crops, Liquor, Lotteries, Marriage, Money-lenders, Crown Suits, Defamation, Newspapers, Pawnbrokers, Prisons, Public Service, Public Trustee, Real Property, Registration of Births, Deaths, and Marriages, of Deeds of Firms, Sheriff, Small Debts Recovery, Stage Carriages, Wills, Probate and Administration, Poor Prisoners Defence.	Is charged with—business relating to the offices of the Chief Justice, and Puisne Judges, Supreme Courts, District Courts, Circuit Courts and Quarter Sessions, deals with all matters relating to remission of sentences, or of fines or estreats or control of Court houses, etc., and advises the Govt. on all legal questions.

NEW SOUTH WALES—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
5. Department of Lands— (a) Survey of Lands. (b) Local Land Boards. (c) Trigonometrical Survey. (d) Land Appeal Court. (e) Western Land Board. (f) Closer Settlement Advisory Boards.	Crown Lands, Newcastle Pasture Reserve, Public Roads, Public Parks, Public Gates, Public Trusts, Labour Settlements, Prickly Pear Destruction, Western Lands, Closer Settlement.	All business arising from tenures created by Crown Lands Acts and other Acts mentioned, dedications and reservations, exchanges of land, proclamation of towns and villages, business connected with Land Appeal Court, local boards, district surveyors, and Crown land agents, survey of Crown lands, and triangulation survey of State, and making lands available for settlement.
6. Dept. of Public Works.— (a) Architects Branch. (b) Local Government and National Works. (c) Harbours and Drainage. (d) Railway and Tramway Construction. (e) Engineering Drafting. (f) Survey Drafting. (g) Survey. (h) Land Valuation. (i) Local Government. (j) Accounts. (k) Bonds and Contracts. (l) Industrial Undertakings. (m) Metropolitan Board of Water Supply and Sewerage. (n) Hunter District Water Supply and Sewerage Board. and (o) Country Towns Water Supply and Sewerage.	Public Watering Places, Water, Public Works, Country Towns Water and Sewerage, Metropolitan and Hunter District Water and Sewerage, Scaffolding and Lifts, Local Government, Municipal loans, Authorisation, Validation, Impounding, and all Acts connected with authorised Public Works.	Erection, maintenance, and repair of public buildings and works; construction of harbour works, docks, water supply and sewerage works, tanks and wells, railways and tramways; "National" roads and bridges; surveys and valuations; administration of Local Government Acts; construction of dredges and punts, machinery, State Brick and Lime works, Quarries, Timber Yards, and Workshops, Joinery works, Pipe works.
7. Department of Mines— (a) Ministerial Branch. (b) Registrar and Inquiry. (c) Account and Examining. (d) Lease. (e) Charting and Mining Survey. (f) Geological Survey. (g) Geological Survey Laboratory. (h) Inspectors of Mines and Drills. (i) Miners' Accident Relief Board. (j) Prospecting Board. (k) Mining Museum. (l) Sludge Abatement Board. (m) Coalfields (n) Correspondence. (o) Records.	Mining, Miners' Accident Relief, Mines Inspection, Coal Mines Regulation, State Coal Mines.	All matters relating to mining generally; geological and mining surveys; assays, inspection of mines, miners' accident relief, advances to prospectors.
8. Dept. of Agriculture— (a) Administrative. (b) Accounts. (c) Stock. (d) Forestry. (e) Superintendent and Chief Inspector. (f) Fruit Expert (g) Exports and Imports. (h) Library and "Agricultural Gazette." (i) Sheep and Wool Expert. (j) Dairy Expert. (k) Chemist. (l) Entomologist. (m) Botanic Gardens, Centennial Park, &c. (n) Hawkesbury Agricultural College. (o) Experiment Demonstration and School Farms. (p) Agricultural Museum. (q) Viticultural Expert. (r) Poultry Expert (s) Herd Master. (t) Biologist.	Vine and Vegetation Diseases, Fruit Pests, Wine Adulteration, Fertilisers, Pastures Protection, Commons, Stock, Stock Diseases, Forestry, Trustees of Show Grounds Enabling, Fruit Cases.	Matters relating to agriculture, forestry, stock, including experiment and demonstration farms, stud farms, viticultural stations and nurseries, experiment plots, Agricultural college, Farm Schools, Farm apprentice schools, Botanic Gardens, Centennial Park and Sydney Domain, Nursery Gardens, Campbelltown; irrigation farms, and supervision of dairies for instructional purposes; destruction and prevention of fruit pests; diseases of stock; publication of Agricultural Gazette and Bulletins; and general advice and instruction on agricultural matters.

NEW SOUTH WALES—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Other Matters dealt with or under Control.
9. Dept. of Public Instruction— (a) Ministerial Branch. (b) Chief Inspector's Branch. (c) School Architect's Branch. (d) Teachers' Training College. (e) Technical Education. (f) Technological Museums. (g) State Children's Relief. (h) Industrial Schools and Reformatories. (i) National Art Gallery. (j) Conservatorium of Music. (k) Public Library. (l) Australian Museum. (m) Observatory.	Public Instruction, Free Education, State Children's Relief, Children's Protection, Infant Protection, Neglected Children and Juvenile Offenders, Anatomy, Public Library and Art Gallery, Australian Museum, Schools of Arts, University and University Colleges, Sydney Grammar School, Bursaries Endowment, Trades Hall and Literary Institute.	All matters dealing with education: high schools, district schools, continuation (junior, technical, commercial and domestic) schools, kindergarten and subsidised teaching, technical education, scholarships, qualifying, intermediate and leaving certificates, medical inspection of school children, anthropometrical survey of school children, rural camp schools for city children, travelling schools, school agriculture, central school conveyance system, physical training, swimming, etc.
10. Department of Labour and Industry—	Early Closing, Factories and Shops, Shearers' Accommodation, Agreements validating Apprentices, Truck, Minimum Wage, Saturday Half Holiday, Industrial Arbitration, Gas, Clerical Workers, Workmen's Compensation Act.	All matters relating to regulation of working conditions in factories and shops, early closing, industrial boards and their awards, industrial matters generally, and State Labour Bureau.

VICTORIA.—ADMINISTRATIVE GOVERNMENT, 1914.

1. Chief Secretary— (a) Board for the Protection of Aborigines. (b) Public Service Commissioner. (c) Registry of Friendly Societies. (d) Observatory. (e) Government Statist. (f) Marine Board. (g) Audit. (h) Lunacy. (i) Explosives. (j) Mercantile Marine. (k) Marine Board. (l) Neglected Children and Reformatory Schools. (m) Penal and Gaols. (n) Police. (o) Premier's Office. (p) Inspection of Stores. (q) Public Library. (r) Government Shorthand Writer. (s) Training Ships. (t) Fisheries and Game.	Aborigines, Animals Protection, Constitution, Crimes, Explosives, Fire Brigades, Friendly Societies, Gaols, Inebriates, Libraries, Licensing (part), Lunacy, Marine, Marine Stores and Old Metals, Matches, Medical, Neglected Children, Poisons, Police Offences, Police Regulations, Public Service, Registration of Births, Deaths and Marriages, Theatres, Weights & Measures, Dentists, Indeterminate Sentences, Infant Life Protection, Statistics, and Opium (part), Motor-car, Electoral, Preferential Voting, Pear-rifles and Saloon-Guns, Workers' Compensation, Fisheries, Game.	Departmental business connected with the Houses of Parliament, execution of capital sentences, local option, prisons, the Govt. Gazette, Lotteries, Gaming and Betting, Public Library, Museum and Art Gallery, "Hansard," Police, Public and Bank Holidays, Fisheries, Game, and other matters as indicated in columns 1 and 2.
2. Attorney-General and Minister of Justice— (a) Supreme Court. (b) County Court. (c) Crown Law Offices. (d) Crown Solicitor. (e) Master in Equity and Lunacy. (f) Prothonotary. (g) Registrar of Titles. (h) Sheriffs.	Supreme Court, County Court, Coroners, Justices, Licensing (part), Probate, Crimes, Juries, Declarations & Affidavits, Children's Courts, Companies, Conveyancing, Crown Remedies, Registration of Firms, Hawkers, Insolvency, Instruments, Mines (part), Money-lenders, Pawnbrokers, Real Property, Transfer of Land, Stamps, Trusts, Book Debts, and Imprisonment of Fraudulent Debtors.	Bankruptcy and insolvency, administration and probate, control of courthouses, etc., preparation of legal instruments, administration of justice generally, and advice to Government in all legal questions.
3. Treasury— (a) Land and Income Tax Office. (b) Printing Office. (c) Curator of Intestate Estates. (d) Charities. (e) Tender Board.	Auction Sales, Hospitals and Charities, Public Moneys, Savings Bank, Income Tax, Licensing (part), and Acts relating to loans, State Land Tax.	Conduct of finances, Government banking, the public debt, preparation of Estimates and Budget, financial aid to charities, endowment to municipal institutions.

VICTORIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
4. Public Instruction—	Education, Teachers, Registration of Teachers and Schools.	Education generally, supervision of the Training College, registration of teachers & schools.
5. Railways—	Railways and other Acts relating to specific railways and railway loans.	Management and maintenance of Government railways and electric trains.
6. Mines—	Mines, Gold Buyers, Boilers Inspection, Mines Development, Coal Mines Regulation.	Deals with applications for mining leases and licenses, water rights, prospecting.
7. Water Supply—	Water, Waterworks Construction, Water Supply, Loans Application.	Administration of various water works trusts, construction of water works and irrigation systems, boring for water.
8. Agricultural—	Agricultural Colleges, Vegetation Diseases, Stock Diseases, Milk and Dairy Supervision, Artificial Manures, Thistle, and Vine Diseases, Sheep Dipping.	Agricultural colleges & experimental farms, orchards, vineyards, and horticultural gardens, dissemination of information regarding agricultural etc. pursuits, lectures and demonstrations in practical and theoretical agriculture, etc., "Agricultural Journal" and "Agricultural Year Book."
9. Lands— (a) Survey. (b) Botanic Gardens and Domain. (c) Land Purchase & Management Board. (d) Advertising & Intelligence Department (Immigration).	Lands, Closer Settlement, Vermin Destruction, Local Government (part), Seed Wheat Advances, Bush Fires Loan, State Aid Abolition, Mines (part).	Survey, sale, and administration of Crown lands, including occupation for industrial, agricultural, and pastoral purposes. Immigration, assisted and nominated passages.
10. Public Works— (a) Roads and Bridges and Local Govt. Brch. (b) State Schools. (c) Dredges and Snagging. (d) Ports and Harbours.	Local Government, Electric Lighting and Power, Pounds, Dog, Unused Roads and Water Frontages, Tramways, Drainage Areas, Municipal Grounds, Upper Yarra Traffic, Country Roads.	Construction of public works, erection and repairs of all Government buildings, railway construction, lighthouses, buoys, and signal stations, snagging operations in rivers, Alfred Graving Dock, Government steamer, immigration, Labour Bureau.
11. Labour—	Factories and Shops, Servants, Registry Office.	Inspection of factories, workshops and shops, wages boards, lifts.
12. Forests—	Forests.	
13. Public Health—	Health, Cemeteries, Pure Food.	Public health generally, inspection of food.

QUEENSLAND.—ADMINISTRATIVE GOVERNMENT, 1914.

1. Chief Secretary— (a) Auditor-General. (b) Agent-General. (c) Bureau of Exchange of International Publications. (d) Govt. Residency, Thursday Island. (e) Immigration Dept. (f) Intelligence & Tourist Bureau. (g) S.S. <i>Lucinda</i> . (h) Pub. Library, Art Gallery, and Museum.	Constitution, Extradition, Immigration, Officials in Parliament, Public Service, Standard Time.	Commissions, etc., under Public Seal of State, foreign correspondence, immigration, justices of the peace, legislation, public service, communications with Governor and with States, Commonwealth British, colonial, and foreign Governments.
2. Public Instruction—	University, Grammar Schools, State Education, Central Technical College.	Primary education, schools of art and technical colleges, grammar schools, University of Queensland.
3. Railways—	Railways, Railway Construction, (Land Subsidy), Railways (Employés' Appeal).	Railways and tramways management and construction.

QUEENSLAND—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
4. Home Secretary— (a) Government Advertising Board. (b) Electoral Department. (c) Board of Health. (d) Registrar-General. (e) Dental Board. (f) Local Auditors Board. (g) Medical and Pharmacy Board. (h) Aborigines. (i) Benevolent Asylum. (j) Police. (k) Prisons. (l) Orphanages. (m) Cemeteries. (n) Conciliation Boards. (o) Dalby Sanatorium. (p) Diamantina Hospital for Incurables. (q) State Children's Department, Government Statistician.	Aborigines, Bank Holidays, Brisb. Traffic, Careless Use of Fire, Carriers, Cemetery, Charitable Institutions, Children's Protection, Contagious Diseases, Dental, Elections, Fencing, Fire Brigades, Hawkers, Health, Hospital, Industrial Schools, Inebriates, Infant Life Protection, Influx of Criminals Prevention, Insanity, Legitimations, Leprosy, Liquor, Local Govt., Medical, Native Labourers, Party Processions, Pharmacy, Police, Prisons, Religious, etc., Institutions, Registration Births, etc., Poisons, State Children, Statistical Returns, Traffic, Water Police.	Is charged with business connected with—aborigines, cemeteries, elections, fire brigades, holidays, hospitals and charitable institutions, industrial and reformatory schools, infant life protection, insanity, lazarets, local Government, police, prisons, public health, quarantine, remission and execution of sentences and penalties, State children, theatres, miscellaneous services, and all other matters of internal arrangement not confided to any other Minister.
5. Treasury— (a) Government Analyst. (b) Govt. Printing Office. (c) Government Savings Bank. (d) Government Stores. (e) Harbours and Rivers Department. (f) Income Tax Department. (g) Marine Department. (h) Marine Board. (i) Water Supply Department. (j) Compr. of Central Sugar Mills. (k) Workers' Dwellings Board.	Coast Survey, Explosive, Fisheries, Savings Banks, Annuities, Auctioneers, Harbour Boards, Harbour Dues, Income Tax, Irrigation, Loans, Local Works Loans, Merchant Shipping and Seamen's, Navigation, Oyster, Pearlshell and Bêche-de-mer, Port Dues Revision, Firms Registration, Rights in Water and Water Conservation, Stock Inscription, Sugar Works, Treasury Notes and Bills, Tobacco, Water Authorities, Weights and Measures.	Central sugar mills, dredges, fisheries, finance generally, harbour boards and improvements, navigation, ports and harbours, powder magazines, printing, public debt, savings banks, taxation generally, trade and commerce, water supply, water conservation, weights and measures, wharves and jetties.
6. Attorney-General— (a) Crown Solicitor. (b) Supreme & District Courts. (c) Curator in Intestacy and Insanity. (d) Trustees in Insolvency. (e) Registry of Friendly Societies. (f) Registry of Titles. (g) Com. of Stamps. (h) Police Magistrates. (i) Petty Sessions.	Building Societies, Children's Courts, Companies, Criminal Code, District Courts, Friendly Societies, Inquests of Death, Inquest on Fires, Insolvency, Intestacy, Jury, Leases to Aliens, Printing, Real Property, Small Debts, Stamp Succession and Probate, Supreme Court, Totalisator Restriction, Totalisator Tax, Trade Unions, Workers' Compensation.	Administration of justice generally, advising Government on all legal questions, judicial establishments, courts of petty sessions, preparation of all legal instruments and contracts.
7. Mines— (a) Geological Survey. (b) Mining Registries. (c) Mines Inspectrs. (d) Gold Wardens.	Gold Mining, Mineral Lands, School of Mines.	Geological survey, mineral fields, regulation of mines, Characters Towers School of Mines.
8. Public Lands— (a) District Land Offices. (b) District Survey Offices. (c) Survey Office.	Agric. Lands Purchase, Crown Lands, Past. Leases, Pub. Parks, Pub. Works Land Resumption, Rabbit, Marsupial-proof Fencing, Trustees of Public Lands.	Destruction, etc., of rabbits, and prickly pear, opening and closing roads, reserves, survey, sale, settlement, and occupation of Crown lands, town commonages.
9. Agriculture— (a) Agricultural College. (b) Inspectors of Stock and Sheep & Registry of Brands. (c) Botanic Gardens. (d) State Farms and Nurseries. (e) Sugar Experiment Stations.	Agric. Bank, Brands, Dairy, Diseases in Plants, Sheep and Stock, Game & Fish Acclimatization, Grape-vine Diseases, Live Stock and Meat Export, Margarine, Marsupial Boards, Meat and Dairy Produce Encouragement, Native Birds' Protection, Pure Seeds, Slaughtering, Shearers' and Sugar-workers', State Forests, Sugar Experiment Stations, Sugar Cultivation, Sugar Growers, Sugar Growers' Employees.	Agric. College, Botanic Gardens, brands (horses, sheep, and cattle), diseases in animals and plants, loans in aid of co-operative agric. production, marsupial destruction, meat and dairy produce encouragement, slaughter of cattle for consumption, State farms and nurseries, stock experiment stations, sugar experiment stations.
10. Public Works— (a) Government Architect. (b) Engineer for Bridges. (c) Director of Labour. (d) Factories etc. Inspectors. (e) Inspector of Machinery. (f) Industrial Court.	Metropolitan Water and Sewerage, Electric Light and Power, Factories and Shops, State Industrial Peace, Inspection of Machinery and Scaffolding.	Construction of public buildings, State-school buildings, technical colleges, bridges, hospitals, electric light and power stations.

SOUTH AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1914.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
1. Chief Secretary— (a) Statistical Dept. (b) Audit. (c) Public Actuary. (d) Sheriff. (e) Registry-General. (f) Government Printer. (g) Police. (h) Central Board of Health. (i) Hospitals. (j) Mental Hospital. (k) Destitute Persons. (l) State Children. (m) Government Shorthand Writer.	Civil Service, Audit, Anatomy, Friendly Societies, Registration of Births, Deaths, and Marriages, Prison, Police Prisons, Sheriff, Legitimation, Public Hospitals, Mental Defectives, Destitute Persons, Affiliation Law, State Children's, Health, Vaccination, Sale of Food and Drugs, Places and Public Entertainments, Fire Brigades, Public Charities' Funds, Convicted Inebriates, etc.	Chamber of Manufactures, Civil Service exams., fire brigades, Government <i>Gazette</i> , public charities, Royal commissions, prisons, State printing, inspectors of public houses, administration of hospitals, mental hospitals, etc., public health, law and order, police prisons, correspondence with Governor, judges of Supreme Court, Leg. Council, House of Assembly, other Governments, and consuls.
2. Treasury— (a) Land and Income Tax Department. (b) Stamp Duty Department. (c) Agent General in London.	Seed Wheat, Unclaimed Moneys, Pawnbrokers, Appraisers, Auctioneers, Hawkers, Taxation, Stamp Duty.	Banking, finance and taxation generally, Imperial and other Government pensions, Public Service Superannuation Fund, Publicans' and other licenses.
3. Attorney-General— (a) Law Officers. (b) Pub. Trustees. (c) Curator of Convicts' Estates. (d) Supreme Ct. (e) Registrars of Industrial Soc., etc., in Admiralty, of Probates, of Companies, and of Building Soc. (f) Insolvency Court. (g) Police and Local Courts. (h) Licensing Benches. (i) Registrar-General of Deeds. (j) Coroners. (k) Electoral Department.	Administration and Probate, Public Trustee, Supreme Court, Legal Practitioners, Succession Duties, Companies, Insolvency, Police, Criminal Law, Local Courts, Real Property, Bills of Sale, Preferable Liens, Workmen's Liens, Deposit of Deeds, Coroners, Electoral Code, Licensing Acts in which magistrates have jurisdiction, Ancient Lights, Declarations, oaths and affirmations.	Responsible for Government Parliamentary bills and administration of Local Option and Electoral Acts. Deals with issue of summonses and warrants and with preparing informations and complaints, licenses, franchise, appeals from courts.
4. Crown Lands and Immigration— (a) Crown Lands Office. (b) Roads Department. (c) Woods and Forests Department. (d) Tourist Bureau. (e) Intelligence Department. (f) Survey Department. (g) Photolithographic Department.	Corporations, District Councils, Dog, Manufacturing Districts, Ornamental Grounds, Blocker's Loan, Fences, Bird and Animal Protection, Game, National Park, Noxious Weeds, Wild Dogs, Roads, Main Roads, Woods and Forests, Pastoral, Vermin, Licensed Surveyors, Weights and Measures, Botanic Garden, Advances to Settlers, Immigration, Impoundings, Travelling Stock, Waybills.	Matters affecting municipal corporations respecting the Acts under which they are constituted. Payment of main road grants, subsidies, and license fees. All matters affecting Crown lands, roads and bridges, immigration, forest reserves, surveys, botanic gardens, photolithography, issue of monthly bulletins, animals and birds.
5. Public Works— (a) Railways Department. (b) Engineer-in-Chief's Department. (c) Hydraulic Engineer's Department. (d) Works and Buildings and Labour Bureau Department. (e) Marine Board Department. (f) Control of Government Wharves Department. (g) Supply and Tender Board Department. (h) Aborigines Department.	Railway Commissioners, Railways Service Appeal Board, Refreshment Rooms, South-eastern Drainage, Water Conservation, Waterworks, Sewers, Murray River Works, Adelaide Cemetery and Cremation, Marine Board and Navigation, Renmark Irrigation Trust, Municipal Tramways Trust.	Construction and maintenance of railways, south-eastern drainage works, water conservation works and artesian boring, construction of roads outside district councils, town and country waterworks, Adelaide, Glenelg, and Port Adelaide sewers, weirs, locks, and other improvements River Murray, State Government buildings and Adelaide cemetery, harbours, jetties, lighthouses, and dredging, ministerial control of Renmark Irrigation Colony and Adelaide Municipal Trust, care of the aborigines.
6. Mines— (a) Department of Mines. (b) Government Geologist.	Mining, Gold Dredging.	All matters arising under Mining Acts, warden's courts, record of assays, geological surveys and reports.
7. Education— (a) Education Department (b) Observatory. (c) Adelaide University. (d) Adelaide School of Mines. (e) Country Schools of Mines. (f) Public Library, Museum, and Art Gallery. (g) Institutes Association.	Education, Adelaide University, Degrees in Surgery, University Site, Public Library, Museum and Art Gallery, School of Mines.	Education generally, including primary, secondary, technical, and university, institutes, astronomical (but not meteorological) work.

SOUTH AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
8. Department of Industry—	Industrial Arbitration, Factories, Early Closing, Sale of Furniture, Scaffolding, Lifts, Shearers' Accommodation, Steam Boilers and Engine Drivers, Workmen's Compensation Act.	Factories, shops, early closing, industrial disputes, etc.
9. Agriculture and Irrigation— (a) Department of Agriculture. (b) Advisory Board of Agriculture. (c) Agricultural College. (d) Dairy Department. (e) Poultry Department. (f) Horticultural Department. (g) Stock and Brands. (h) Veterinary Department. (i) Produce Department. (j) Irrigation. (k) Experimental Farms.	Bush Fires, Fertilisers, Fisheries, Vine, Fruit and Vegetable Protection, Commerce, Hay and Chaff, Insecticides, Phylloxera, Irrigation, Stock Diseases, Brands.	Scientific farming, agricultural colleges and experimental farms, agricultural instruction and general development of agriculture: handling, shipping and cold storage of produce, inspection of stock, registration of stock brands, reclamation and irrigation of land, fish industry.

WESTERN AUSTRALIA.—ADMINISTRATIVE GOVERNMENT, 1914.

1. Colonial Secretary— (a) Aborigines. (b) Fisheries. (c) Friendly Societies and Industrial Arbitration. (d) Gaols. (e) Government Gardens. (f) Harbour and Light. (g) Immigration and General Information. (h) Lunacy. (i) Medical, Public Health and Factories. (j) Early Closing. (k) Observatory. (l) Police. (m) Public Charities, State Children, and Government Labour Bureau. (n) Registry and Statistical. (o) State Steamship Service.	Aborigines, Adoption of Children, Bread, Bank Holidays, days, Benefit Building Societies, Bunbury Harbour Board, Bills of Lading, Boat Licensing, Conspiracy and Protection of Property, Co-operative and Provident Societies, Coasting Vessels, Dentists, District Fire Brigades, Early Closing, Employment Brokers, Fremantle Harbour Trust, Friendly Societies, Fisheries, Factories, Game, Harbours and Rivers, Hospitals, Health, Industrial Arbitration, Jetties, Bridges, etc., Lunacy, Inebriates, Merchant Shipping, Marine Stores, Medical, Newspaper Libel, Navigation, Oyster Fisheries, Public Institutions, etc., Prisons, Pearl- ing, Police, Police Benefit Fund, Pharmacy and Poisons, Perth High School, Registration of Births, Deaths and Marriages, Racing Clubs, Royal Commissioners' Powers, Statistical, State Children, Interstate Destitute Persons Relief, Shearers' Accommodation, Seamen, Shipping, Trespass, Trades Unions, Truck, Toll from Wharves, etc., White Phosphorus Matches Prohibition, University Endowment, Vaccination, Whaling, Workers' Compensation, Workmen's Wages.	Consuls, passports, inspection of fisheries, protection of aborigines, actuarial, industrial arbitration, friendly societies, trades unions, prisons, Government gardens, light-houses and signal stations, harbours and rivers, coastal surveys, immigration, and general information, immigration bureau (Fremantle), immigrants' home (Fremantle), hospitals, hospitals for insane, early closing, sanitation, factories, astronomical, police, poor relief, State children, infant life protection, lying-in homes, maintenance under Interstate Destitute Persons Relief Act, labour bureau, births, marriages and deaths, statistics, children's courts, old men's home, old women's home, penal settlement, inebriates' homes, Sunday entertainments, ferries, State steamships, State dairy farm, marine certificates.
2. Treasury— (a) London Agency. (b) Printing Dept. (c) Savings Bank. (d) Lithography. (e) Stores. (f) Stamp Duties. (g) Inspection of Liquors. (h) Tender Board. (i) Premier's Office. (j) Worker's Home Board. (k) State Hotels and Tourist. (l) Public Service Commissioner.	Loan, Inscribed Stock, Treasury Bills, Auctioneers, Stamp, Wines, Beer and Spirits Sale, Employment Brokers, Gun Licensing, Gov. Savings Bank, Land and Income Tax, Dividend and Totalisator Duties, Workers' Homes, Pensions, Audit, Public Service, Sale of Government Properties.	Finance generally, general stores, stamp duties, savings bank, pensions, State hotels and tourist.

WESTERN AUSTRALIA—(continued).

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
3. Attorney-General— (a) Crown Law Offices. (b) Supreme Court. (c) Stipendiary Magistrates. (d) Land Titles Office. (e) Electoral Office. (f) Official Receiver. (g) Curator of Intestates' Estates. (h) Sheriff.	Administration of Justice, Association Incorporation, Bankruptcy, Bills of Sale, Building Society's Rules, Conciliation, Corporations, Companies, Criminal Code, Compensation for Accidents, Conveyancing, Crown Suits, Divorce, Death Duties, Evidence, Extradition, Electoral, Firms' Registration, Foreign Companies, Fugitive Offenders, Intestate Estates, Justice, Life Assurance, Lunacy, Libel, Licensing Laws, Magisterial Districts, Maintenance, Penalties Remission, Quarter Sessions, Real Property, Superannuation, Supreme Court Acts, Truck Act, Transfer of Land, Workers' Compensation, Workmen's Wages, Usury, etc.	Criminal and civil law, conveyancing, parliamentary drafting, sheriffs, bankruptcy, intestacy, licensing, petty debts, petty sessions and police courts, land titles and registration of deeds and leases, elections.
4. Public Works— (a) Engineering Division. (b) Architectural Division.	Roads Board, Public Works, Tramways, Electric Light, Municipal Corporations.	Public buildings and works generally, railway and tramway construction, municipalities, and road boards, State saw mills and brick yards.
5. Water Supply, Sewerage and Drainage— (a) Goldfields Division. (b) Metropolitan " (c) Agricultural " (d) North-West "	Goldfields Water Supply, Water Boards, Metropolitan Water Supply, Sewerage and Drainage, Land Drainage.	All State hydraulic, sewerage, land drainage and irrigation undertakings.
6. Agricultural— (a) Department of Agriculture and Industries. (b) Commissioner Wheat Belt. (c) Commissioner South-West. (d) Commissioner Fruit Industries. (e) Stock, Brands, Poultry, and Veterinary Inspection. (f) Rabbit and Vermin Board. (g) Markets, Refrigerating Works, Saleyards and Abattoirs. (h) Irrigation. (i) Botanist, Pathologist, and Entomologist. (j) Traction Engine Clearing. (k) State Implement and Engineering Manufacture. (l) State Meat Stalls.	Rabbit, Stock Diseases, Scab, Brands, Insect Pests, Noxious Weeds, Fertilisers and Feeding Stuffs, Contagious Diseases in Bees, Droving, Abattoirs, Vermin, Veterinary Surgeons, Destructive Birds and Animals, Agricultural Bank, Cattle Trespas, Fencing and Impounding, Live Stock and Frozen Meat.	Agricultural, horticultural, dairying and pastoral pursuits generally, irrigation, abattoirs and refrigerating works, State markets, manufacture of agricultural implements, clearing by traction engines, advances to settlers' encouragement of secondary industries, Narrogin farm school, State orchards, orchards and insect pests, Federal quarantine in connection with fruit export, poultry and veterinary inspection.
7. Education— (a) Primary Education. (b) Secondary Education. (c) Training College for Teachers. (d) Technical Education.	Education.	Education generally, including primary, secondary, continuation and technical schools, Inspection of Schools, Training of Teachers.
8. Railways—	Government Railways and Tramways.	Management, maintenance and control of Govt. Railways, Perth electric trainways.
9. Mines— (a) Explosives and Analytical. (b) Inspection of Machinery. (c) Mining Engineers. (d) Geological Survey. (e) State Batteries.	Mining, Sluicing and Dredging for Gold, Explosives, Inspection of Machinery, Mines Regulation, Coal Mines, Mining Development.	Mining generally, State batteries and reduction plants.
10. Lands— (a) Lands and Surveys. (b) Woods and Forests.	Land, Cemeteries, Licensed Surveyors, Bush Fires, Timber Regulations, Parks, Reserves, Agricultural Lands Purchase, Opening and Closing of Roads under Lands Act.	All business in connection with holdings under the Land Acts, reserves, roads, land selection, district survey offices, land agencies.

Departments, Sub-Departments, Branches, etc.	Acts Administered.	Matters dealt with or under Control.
11. Audit.	Audit.	Audits generally and as provided by special Acts.
12. Taxation. (a) Land Tax. (b) Income Tax. (c) Dividend Duty. (d) Totalisator Duty. (e) Totalisator Licenses.	Land and Income Tax Assessment, Land Tax and Income Tax, Dividend Duties, Totalisator Duty, Totalisator Regulation.	Direct taxation generally (except stamp duties), totalisator licenses.

TASMANIA.—ADMINISTRATIVE GOVERNMENT, 1914.

1. Premier— (a) Governor's Establishment. (b) Premier's Dept. (c) Executive Council. (d) Agent-General.	...	Correspondence with State, Federal, Colonial, British, and Foreign Governments, with Agent-General & Governor, despatches from Secretary of State referred by the Governor, matters submitted by other Ministers.
2. Chief Secretary— (a) Houses of Parliament. (b) Electoral. (c) Audit. (d) Statistical & Registration. (e) Inspection of Machinery, Magazines and Explosives. (f) Fisheries. (g) Public Buildings. (h) Charitable Institutions. (i) Boys' Training School. (j) Invalid Depôt. (k) Neglected Children's Department. (l) Medical Institutions. (m) Hospitals. (n) Public Health. (o) Explosives. (p) Public Service Board.	Audit, Bank Holidays, Cemeteries, Registration of Births and Deaths, Botanical Gardens, Charitable Institutions, Electoral, Fire Brigades, Factories, Fisheries, Hospitals, Inebriates, Museum & Art Gallery, Newspapers, Pensions, Pharmacy, Public Health, Public Service, Vaccination, Wages Boards, Midwifery, Shops Closing, Workers' Compensation.	Charitable institutions, cemeteries, public health, electoral, franchise, fisheries, machinery, statistics, training & industrial schools, public service, explosives, wages boards.
3. Treasury— (a) Taxes. (b) Printing. (c) State Savings Bank. (d) Agricultural Bank. (e) Merchant Ship's Officers' Exam. Board.	Suppression of Public Betting, Licensing, Billiard Tables Licensing, Stamp Duties, Auction, Pawnbrokers, Public Debts, Loans to Local Bodies, Land Tax, Taxation, Income Tax, Assessment, Savings Bank, State Advances, Merchant Ships' Officers' Examination.	Finance generally, collection of internal revenue and of stamp duties, Government printing.
4. Mines—	Mining, Mining Companies, Mining Companies (Foreign).	All matters arising under Acts dealing with mining, registration of mining companies.
5. Lands— (a) Lands Branch Office, Launceston. (b) Agricultural and Stock Department.	Crown Lands, Closer Settlement, Game Protection, Stock, Diseased Animals, Contagious Diseases (cattle), Rabbits Destruction, Californian Thistle, Vegetation Diseases, Codlin Moth.	Crown lands and surveys, agriculture and stock.
6. Public Works—	Railway Management, Public Works, Local Government.	Construction and control of public works, including railways.
7. Attorney-General— (a) Supreme Court. (b) Lands Titles. (c) Sheriff. (d) Magistracy. (e) Police.	Probate, Stamp Duties, Foreign Companies, Legal Practitioners, Real Property, Prisons, Bankruptcy, Local Courts, Infant Life Protection, Motor Traffic, Police, Police Regulation.	Courts of law, gaols, justices of the peace and coroners, land titles, police, registration of deeds, Supreme Court & Judges.
8. Education—	Education.	Primary & technical education, University of Tasmania.

SECTION XXVI.

LOCAL GOVERNMENT.

§ 1. Introduction.

1. **Early History of Local Government.**—In the previous issues of this book, a description was given of the systems of Local Government and their development in the several States of the Commonwealth, and at the same time a comparison was made between the Australian and Continental systems. The early history of Local Government in Australia was also dealt with. Owing, however, to considerations of space, these matters have been omitted from the present volume, and the reader is referred to Year Book No. 5, pages 972 to 975.

§ 2. Local Government Systems.

1. **New South Wales.**—(i.) *Development of Local Government.* The history of Local Government in New South Wales has been given in previous issues of this book (see No. 6, page 966). It is not intended to repeat the information in this issue.

(ii.) *Present System of Local Government.* The law relating to local government in New South Wales is now contained in the Acts of 1906, 1907, and 1908. Practically the whole of the State, with the exception of the Western Division, has been brought under the operation of these Acts.

(a) *Areas Incorporated.* Prior to the year 1907 the total area incorporated formed a very small part of the whole area of the State, as may be seen in the following statement:—

AREAS INCORPORATED IN NEW SOUTH WALES, 1860 to 1906.

Year	...	...	1860.	1870.	1880.	1890.	1900.	1906.
Area incorporated—sq. miles	...	...	409	649	1,482	2,387	2,763	2,830

Total area of State (exclusive of Lord Howe Island), 310,367 square miles.

The areas incorporated in 1906 in each of the three territorial divisions of the State were as follows:—

DISTRIBUTION OF INCORPORATED AREAS, 1906.

Division.			Incorporated Area.	Unincorporated Area.	Total Area.
Eastern	...	Sq. miles	1,977	93,742	95,719
Central	...	"	571	88,579	89,150
Western	...	"	282	125,216	125,498
Total			2,830	307,537	*310,367

* Total area of State, exclusive of Lord Howe Island, the area of which is 5 square miles.

The total area incorporated under the Local Government Act 1906, to the end of the year 1912, was 183,569 square miles, of which 180,567 square miles were comprised within shires and 3002 within municipalities. The areas incorporated comprise the whole of the eastern and central divisions of the State, with the exception of Lord Howe Island, the islands in Port Jackson, and the quarantine station at Port Jackson.

(b) *General.* The above Act came into operation on the 1st January, 1907; it provided for the continuation of existing shires and municipalities, for the creation of new ones, and for their reconstitution by uniting, dividing, altering, or converting areas. Each shire is divided into three ridings, and each municipality may be divided into wards by petition of the council or a majority of the ratepayers to the Governor. The coun

consist, in the case of shires, of either six or nine councillors, and in the case of municipalities, of from six to twelve aldermen. A summary of the functions of councils, their powers and duties, together with a detailed statement of rates and ratable property, will be found in previous issues of the Year Book. (See Year Book No. 5, pages 977 to 979.)

(c) *Endowment.* Government endowments to shires are fixed every third year, and the amount is determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The endowment in any year is paid on the basis of the amount of general rates collected in the preceding year. At the end of 1911 the endowments to be paid during the triennium 1912-15 were fixed. The classification for the period mentioned is as follows:—

NEW SOUTH WALES.—ENDOWMENT OF SHIRES, CLASSIFICATION, 1912-15.

Class.	1st.	1st.	2nd.	3rd.	4th.	5th.	6th.
No. of Shires	54	59	7	5	3	5	1
Endowment received in the £ on general rate Up to	-	10s.	15s.	20s.	25s.	30s.	†

* No endowment. † Not less than 40s. in the £ on the general rate.

It is also provided that all municipalities not receiving statutory endowment under any Act repealed by the Act of 1906 shall, upon the result of investigations made into their administration and financial necessities, be entitled to a sum not exceeding three shillings and fourpence in the pound on the general rate collected: but if the revenues are sufficient to meet the reasonable requirements of the corporation under proper management no endowment will be paid.

(iii.) *Shires, 1912.*—The total area of the 134 shires constituted under the new system is 180,567 square miles, and the population on the 31st December, 1912, was 632,570.

The shires vary in area from 36 square miles in the case of Ku-ring-gai, immediately north of the metropolis, to 5730 square miles in the case of Lachlan in the Condobolin district.

(a) *Valuation and Rates Levied.* The unimproved capital value of the shires in 1912 was £97,461,454, as against £94,189,939 in the preceding year. It is not possible to give the improved capital value or the assessed annual value, as the shires are not compelled to make these valuations, and in many cases do not make them. The total amount of all rates levied was £524,485.

(b) *Revenue.* The principal heads of revenue for the five years since the new Act came into force are shewn in the following table:—

NEW SOUTH WALES.—INCOME OF SHIRES, 1908 to 1912.

Particulars.*	1908.	1909.	1910.	1911.	1912.
<i>General Fund—</i>	£	£	£	£	£
General rates	382,386	374,540	421,596	463,501	517,025
Government endowment...	162,859	261,029	277,731	319,593	372,952
Public works	65,781	57,017	59,527	45,381	45,152
Health administration ...	2,979	3,033	3,746	3,998	4,886
Public services	7,038	6,691	7,441	8,769	9,232
Shire property	517	1,721	4,229	6,731	8,768
Miscellaneous	4,198	5,651	5,008	8,594	5,648
<i>Special and Local Funds</i> ...	1,160	7,462	15,095	24,516	35,835
 Total revenue... ..	 626,868	 717,144	 794,373	 881,033	 999,498

* The receipts for Public Works, Health Administration, Public Service, etc., include Government grants, the total endowments and special grants during 1912 amounting to £402,820.

(c) *Expenditure.* The following statement shows the expenditure of shires during the years 1908 to 1912 inclusive:—

NEW SOUTH WALES.—EXPENDITURE OF SHIRES, 1908 to 1912.

Particulars.	1908.	1909.	1910.	1911.	1912.
<i>General Fund—</i>	£	£	£	£	£
Administrative expenses ...	116,932	117,696	125,669	128,126	*83,721
Public works ...	516,072	529,954	599,945	647,220	773,479
Health administration ...	4,604	4,573	4,840	5,724	7,199
Public services ...	11,702	10,290	13,012	15,410	15,809
Shire property ...	397	1,911	4,561	7,657	10,419
Miscellaneous ...	6,453	5,886	5,129	7,120	8,430
<i>Special and Local Funds</i> ...	58	6,474	11,976	20,949	34,268
Total expenditure...	656,218	676,784	765,132	832,206	933,325

* Exclusive of proportion of Administrative expenses payable from Special and Local Funds, previously included under General Fund.

(d) *Assets and Liabilities.* The financial position of the shires at the end of the year 1912 was strong, as there was an excess of assets of £377,926. The following table gives particulars of assets and liabilities as at the 31st December, 1912:—

NEW SOUTH WALES.—ASSETS AND LIABILITIES OF SHIRES, 1912.

Assets.		Liabilities.	
<i>General Fund—</i>		<i>General Fund—</i>	
Outstanding rates ...	£31,814	Temporary loans ...	£17,212
Stores and materials ...	10,740	Sundry creditors ...	45,121
Bank balance ...	149,378	Due on contracts ...	829
Sundry debtors ...	6,435	Due to trust fund ...	56
Land ...	11,107	Other ...	176
Buildings ...	55,529	<i>Special and Local Funds</i>	14,100
Plant and property*	150,663		
Furniture ...	14,823		
Other ...	930	Total ...	£77,494
<i>Special and Local Funds</i> ...	24,001	Excess of assets ...	377,926
Total ...	£455,420	Total ...	£455,420

* Including saleyards, pounds, baths, public watering-places, ferries, wharves, etc.

(iv.) *Municipalities.* Including the City of Sydney there are 190 municipalities in New South Wales; of these forty are in the suburbs of Sydney and twelve in the district of Newcastle and suburbs. Since the 1st January, 1908, under the Local Government Act 1906, municipalities must levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or improved capital value. Municipal rates are therefore no longer charged on the annual value; the only rates based on that value are those charged by the Metropolitan and Hunter River Water Supply and Sewerage Boards.

(a) *Capital Value, Area, Population, and Rates Levied.* The following table shows the improved capital value, the area, population, number of buildings, and amount of rates levied in municipalities for the years 1901 and 1908 to 1912:—

NEW SOUTH WALES.—MUNICIPALITIES, IMPROVED CAPITAL VALUE, AREA, POPULATION, NUMBER OF BUILDINGS, AND TOTAL RATES LEVIED, 1901 and 1908-12.

Year ended 31st Dec.*	Sydney and Suburbs.					Country.				
	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.	Improved Capital Value.	Area.	Population.	Number of Dwellings.	Total Rates Levied.
	£	Acres.	No.	No.	£	£	Acres.	No.	No.	£
1901 ...	88,118,600	91,220	1487,900	94,907	277,457	36,429,600	1,732,302	371,330	73,862	127,564
1908 |	105,641,359	95,259	592,100	120,655	527,926	44,659,776	1,822,821	444,800	84,150	286,329
1909 ...	108,120,427	95,319	605,900	123,860	631,589	44,716,888	1,822,821	456,280	85,341	299,306
1910 ...	111,318,074	95,259	629,503	126,476	647,762	45,824,999	1,822,821	421,714	89,107	310,849
1911 ...	119,375,694	95,259	641,960	\$	726,712	47,484,486	1,822,821	431,500	\$	340,075
1912 ...	124,875,964	95,259	683,780	\$	770,879	48,814,203	1,826,795	444,190	\$	373,765

* Prior to 1908 the municipal year ended on the first Monday in February, since when the municipal year closes on 31st December. † Census, March, 1901. ‡ Census, April, 1911.
§ Not available. || For eleven months ending 31st December.

The following table gives a comparison of the unimproved and improved values for the years 1908 to 1912 inclusive :—

NEW SOUTH WALES.—MUNICIPALITIES, UNIMPROVED AND IMPROVED CAPITAL VALUES, 1908 to 1912.

Year.	Sydney.	Suburbs.	Metropolis.	Country.	Total.
UNIMPROVED VALUE.					
	£	£	£	£	£
1908 ...	20,207,812	23,799,856	44,007,668	20,104,983	64,112,651
1909 ...	19,970,365	23,486,535	43,456,900	19,798,286	63,255,186
1910 ...	19,952,793	23,823,398	43,776,191	19,753,131	63,529,322
1911 ...	23,940,030	25,942,704	49,882,734	19,961,743	69,844,477
1912 ...	23,988,480	27,935,494	51,923,974	20,352,473	72,276,447
IMPROVED VALUE.					
	£	£	£	£	£
1908 ...	49,060,600	56,441,828	105,502,428	44,784,238	150,286,666
1909 ...	50,948,240	57,172,187	108,120,427	44,716,888	152,837,315
1910 ...	52,142,200	59,175,874	111,318,074	45,824,999	157,143,073
1911 ...	55,520,640	63,855,054	119,375,694	47,484,486	166,860,180
1912 ...	57,395,288	67,480,676	124,875,964	48,814,203	173,690,167

(b) *Revenue.* The Local Government Act 1906 prescribed that there should be a general fund in each local government area (municipality and shire), and also special funds for specified purposes. The regulations under the Act prescribed the system of accounts to be kept. This system differs materially from the old "cash" system of receipts (cash actually received) and disbursements (cash actually expended).

Prior to 1908 the municipal year ended on the first Monday in February; now it ends on the 31st December. In all statements of municipal accounts for the year 1908, therefore, the period referred to is from the 4th February to the 31st December, except in the City of Sydney, which does not come under the provisions of the Act of 1906 and where the accounts are kept for the calendar year. The first complete year for which financial particulars are available for the municipalities is the year 1909. Particulars of revenue for the year 1912 are given in the following table :—

NEW SOUTH WALES.—MUNICIPALITIES, REVENUE, 1912.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	718,018†	537,244	383,497	920,741†
Trading accounts		8,027	94,804	102,831†
Special and local funds		40,523	249,259	289,782†
Loan funds		42,408	48,057	90,465†
Reserve and Renewals Account		3,810	4,191	8,001†
Gross revenue	718,018†	632,012	779,808	2,129,838
Deduct transfers*	...	37,258	28,309	65,567
Net revenue	718,018†	594,754	751,499	2,064,271

* Transfers from various funds to loan funds for principal, interest, and capital expenditure.

† The city of Sydney accounts are kept on a cash basis, i.e., they show actual receipts and disbursements; the accounts of municipalities operating under the Local Government Act show total revenue and expenditure for the year. Items of receipts and disbursements for the city of Sydney cannot be allocated to the different headings shown for municipalities. † Exclusive of Sydney.

(c) *Expenditure.* Reference has already been made to the system of accounts prescribed by the Local Government Act 1906 (see paragraph (b) hereof). The following table gives particulars of expenditure of municipalities for the year 1912:—

NEW SOUTH WALES.—MUNICIPALITIES, EXPENDITURE, 1912.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
General fund	706,256†	535,953	384,400	920,353†
Trading accounts		8,078	106,035	114,113†
Special and local funds		46,434	228,129	274,563†
Loan funds		34,581	29,709	64,290†
Reserve and Renewals Account		...	1,859	1,859†
Gross expenditure	706,256†	625,046	750,132	2,081,434
Deduct transfers*	...	37,258	28,309	65,567
Net expenditure	706,256†	587,788	721,823	2,015,867

* Transfers from various funds for principal and interest on loans. † See note † to preceding table. ‡ See note ‡ to preceding table.

(d) *Assets and Liabilities.* The financial position of the municipalities as at the 31st December, 1912, is shown by the following statement of assets and liabilities of the various funds:—

NEW SOUTH WALES.—MUNICIPALITIES, ASSETS, AND LIABILITIES, 1912.

Particulars.	Sydney.	Suburbs.	Country.	Total.
	£	£	£	£
Assets—				
General fund	6,030,411†	268,902	446,889	715,791†
Trading accounts		2,480	76,164	78,644†
Special and local funds... ..		35,892	1,176,033	1,211,925†
Loan funds		158,201	513,883	672,084†
Reserves and renewals account		4,759	13,081	17,840†
Total	6,030,411†	470,234	2,226,050	8,726,695
Liabilities—				
General fund	5,654,811†	70,474	61,531	132,005†
Trading accounts		2,763	35,787	38,550†
Special and local funds... ..		26,346	1,084,325	1,110,671†
Loan funds		760,033	634,100	1,394,133†
Reserves and renewals account		4,759	13,081	17,840†
Total	5,654,811†	864,375	1,828,824	8,348,010

† See note † to first table on this page. ‡ See note ‡ to first table on this page.

2. *Victoria.*—(i.) *Development of Local Government.* In Victoria there are now two types of municipal institutions, (a) boroughs, including cities and towns, and (b) shires, and although they are now dealt with by the same Act, their origin was distinct, and in the early days of their development they were provided for by independent enactments. Melbourne and Geelong, the latter of which was for many years the second largest town in the State, having been incorporated under special statutes prior to the establishment of a general system of local government, are not subject to the provisions of the Local Government Acts except in a few comparatively unimportant details. Melbourne was incorporated as a town in 1842, and as a city in 1847; Geelong was incorporated as a town in 1849, and proclaimed a city on 14th December, 1910.

The earlier history of legislation in Victoria relative to Local Government, more especially with reference to the institution of Road Districts, their displacement by Shires, and the constitution of Urban Municipal Districts and Boroughs, has been fully dealt with in previous issues. (See Year Book No. 5, p. 992.)

(ii.) *Present System of Local Government.* Local government is now administered under the Act of 1903 throughout the whole of the State, with the exception of about 6000 square miles in the mountainous parts of the county of Wonnangatta, and the whole of French Island.

(a) *Constitution of Municipalities.* Provision is made for the continuation of municipalities established under previous Acts and for the constitution of new ones.

Definitions of shires, boroughs, and townships have been given in previous issues of this book (see Year Book No. 6, page 978), together with the conditions necessary for their constitution.

(b) *Municipal Councils, etc.* Considerations of space prevent more than a passing reference to the following subjects, which were dealt with in previous issues of this book:—The constitution of municipal councils, their functions and powers, including the power of raising loans, the qualifications necessary for the exercise of the municipal franchise, and the definition of ratable and unratable property. (See Year Book No. 5, pp. 994 to 996.)

(c) *Endowment.* The legislation dealing with municipal endowment prior to 1907 is referred to in previous issues. (See Year Book No. 5, p. 996.) In 1907, under the Municipal Endowment and Reclassification of Shires Act of that year, a new classification was adopted under which the amount of the endowment is to be allocated. In addition to the endowment of £75,000 (increased to £100,000 from the 1st July, 1907), the municipalities received from the Government during the financial year 1912-13 a sum of £30,996 out of the Licensing Act Fund as the equivalent for (a) fees for licenses, (b) fees for the registration of brewers and spirit merchants, and (c) fines, penalties, and forfeitures incurred under the Licensing Act 1876. Under the Act of 1907 the endowment of £100,000 is payable in equal moieties in March and September of each year. No city or town is entitled to receive any part of the endowment. The distribution amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ending on the preceding 30th September according to the following scale:—

VICTORIA.—ENDOWMENT OF BOROUGHS AND SHIRES, 1912-13.

To every Borough or 1st Class Shire, 3s. in the £	To every 4th Class Shire, 8s. in the £
" " 2nd Class Shire 5s. " "	" 5th " 10s. " "
" " 3rd " " 6s. " "	" 6th " 12s. " "

For the three financial years commencing the 1st July, 1907, however, the amounts were definitely fixed by Act No. 2129, and for the financial years 1910-11, 1911-12, and 1912-13 by Acts No. 2267, 2334, and 2404 respectively.

(iii.) *Boroughs and Shires.*—*Number, Population, and Value of Ratable Property.*—The following table shews the number of cities, towns, boroughs, and shires, their estimated

population, the number of ratepayers and dwellings, and the value of ratable property for the years 1901 and 1909-13 inclusive:—

VICTORIA.—PARTICULARS OF MUNICIPALITIES, 1901 and 1909-13.

Financial Year.	Number of Municipalities.	Estimated Population.	Number of Ratepayers (both sexes).	Estimated Number of Dwellings.	Estimated Value of Real Property.	
					Total.	Annual.
CITIES, TOWNS, AND BOROUGHES.						
1901	58	627,237	153,783	130,358	£ 67,302,423	£ 4,765,632
1909	60	717,600	178,928	156,099	106,149,960	6,080,447
1910	60	728,500	183,419	159,478	108,863,963	6,232,091
1911	60	*742,070	187,562	162,489	114,113,507	6,508,544
1912	61	*742,070	194,391	†	119,400,893	6,804,697
1913	61	777,696	200,679	†	127,743,501	7,270,972
SHIRES.						
1901	150	571,683	159,128	122,645	£ 106,839,331	£ 5,771,865
1909	146	558,400	155,492	123,459	136,538,811	7,043,511
1910	146	563,500	159,410	124,739	143,142,655	7,332,397
1911	146	*568,494	163,916	126,951	150,970,220	7,716,815
1912	146	*568,494	168,229	†	155,677,624	7,969,963
1913	147	583,909	173,271	†	160,128,933	8,152,473

* Census figures. † Not available.

(iv.) *Municipal Assets and Liabilities.*—The assets of municipalities may be classified under three heads—(a) the municipal fund, (b) the loan fund, and (c) property; the liabilities under two heads—(a) the municipal fund, and (b) the loan fund. The following table shews the amount of municipal assets and liabilities for the years 1901 and 1908 to 1912:—

VICTORIA.—MUNICIPAL ASSETS AND LIABILITIES, 1901 and 1908-12.

Items.	1901.	1908.	1909.	1910.	1911.	1912.
ASSETS.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Uncollected rates	187,205	116,233	114,598	110,676	105,241	111,405
Other assets	122,581	182,790	267,944	350,092	473,054	522,911
LOAN FUND—						
(a) Sinking funds—						
Amount at credit	675,310	796,272	812,920	834,295	893,528	896,185
Arrears due	1,391	2,806	2,827	3,286	1,182	1,759
(b) Unexpended balances	394,136	220,674	106,852	345,287	264,048	237,202
PROPERTY—						
Buildings, markets, etc.	2,507,441	2,826,394	2,992,809	3,149,476	3,216,854	3,365,638
Waterworks	197,675	220,669	207,451	202,210	207,365	182,835
Gasworks	63,732	66,638	57,399	70,687	72,274	86,872
Total	4,149,471	4,432,466	4,562,800	5,066,009	5,263,546	5,404,807
LIABILITIES.						
	£	£	£	£	£	£
MUNICIPAL FUND—						
Arrears due sinking funds	1,021	2,806	2,827	3,286	1,182	1,759
Overdue interest	9,413	18,535	15,639	15,750	11,997	15,619
Bank overdrafts	157,046	122,453	120,705	133,237	165,275	234,154
Temporary Government advances	20,901	...	...	...	...	...
Other liabilities	142,530	194,283	233,359	293,089	*357,722	*362,136
LOAN FUNDS—						
Loans outstanding	4,253,304	4,437,673	4,416,103	4,767,138	4,831,984	5,011,950
Due on loan contracts	52,826	88,066	49,452	45,089	92,363	102,135
Total	4,637,041	4,863,836	4,838,085	5,257,589	5,460,523	5,727,753

* Including £100,351 due on current contracts.

(v.) *Revenue and Expenditure of Municipalities.*—The following table shows the revenue from various sources, and the expenditure under various heads, of municipalities during the years 1901 and 1908 to 1912:—

VICTORIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES, 1901 and 1908-12.

Items.	1901	1908.	1909.	1910.	1911.	1912.
SOURCES OF REVENUE.						
	£	£	£	£	£	£
Taxation ...						
Rates ...	722,345	902,741	946,956	999,799	1,046,943	1,103,210
Licenses ...	104,499	106,758	101,682	102,066	100,845	102,297
Dog fees ...	14,965	17,628	18,751	19,236	19,833	20,438
Market and weighbridge dues ...	49,623	57,386	68,014	65,739	63,071	74,029
Government endowments and grants ...	175,972	172,648	175,601	187,323	157,141	161,513
Contributions for streets, etc. ...	24,999	34,246	35,173	47,592	47,342	64,646
Sanitary charges ...	48,253	58,072	59,966	62,720	66,389	74,058
Rents ...	54,117	67,387	69,842	77,958	79,263	81,725
Other sources ...	89,210	208,403	195,831	207,181	237,601	263,600
Total ...	1,283,984	1,625,269	1,671,816	1,769,614	1,818,428	1,945,516

HEADS OF EXPENDITURE.

	1901	1908	1909	1910	1911	1912
Salaries, etc. ...	139,270	152,302	158,436	163,435	168,303	176,489
Sanitary work, street cleaning, etc. ...	132,512	142,769	150,964	159,571	178,623	198,006
Lighting ...	86,059	79,832	82,354	83,972	87,341	84,410
Fire brigades' contributions ...	16,769	20,724	22,051	22,228	23,120	25,946
Public works { Construction ...	244,315	313,607	288,869	335,446	311,965	335,717
Maintenance ...	345,334	474,188	490,341	548,583	571,254	736,457
Formation of private streets, etc. ...	23,350	32,718	37,888	32,163	46,549	66,735
Redemption of loans ...	27,745	60,568	58,263	46,439	66,560	61,782
Interest on loans ...	197,810	198,632	201,199	203,355	213,752	217,933
Charities ...	13,407	14,666	15,241	15,589	15,785	18,441
Other expenditure ...	103,403	187,830	173,154	170,840	187,514	129,190
Total ...	1,330,004	1,677,836	1,678,760	1,785,616	1,870,466	2,051,106

3. *Queensland.*—(i.) *Development of Local Government.* The existing scheme of local government in the State of Queensland is regulated by the provisions of the Local Authorities Act 1902, with its amendments in 1903, 1905 and 1910. A summary of these Acts and of the earlier legislation under which the system of local government in Queensland was inaugurated and developed, will be found in previous issues of this book (see Year Book No. 5, p. 1013).

(ii.) *Present System of Local Government.*—The principal features of previous enactments as to the division of the State into local areas are retained in the Acts of 1902 and 1910, but such areas are in future to be of two classes—(a) towns and (b) shires. All municipalities formerly constituted as boroughs become towns, except Brisbane, Rockhampton, and Townsville, which are declared to be cities, and all shires and divisions become shires. The Governor-in-Council may, after giving notice in the *Gazette*, constitute, unite, divide, or abolish areas for the purpose of forming new areas, and may by proclamation constitute a town or city.

(a) *The Municipal Council.* All local areas are governed by councils, the members of which are called aldermen in the case of cities and towns, and councillors in the case of shires. *City and town councils* are composed of either seven, nine, or eleven members, as declared by Order-in-Council, but if the local authority has wards, three members are assigned to each ward. *Shire councils* are composed of five, seven, or nine members, as declared by Order-in-Council, but if the shire is divided the number cannot be more than three for each division, and need not be the same for every division.

In previous Year Books allusion has been made at some length to the powers and duties of municipal councils, as well as to loans, valuation, rates and tramway areas. It is not proposed to repeat this information in the present issue.

(b) *Qualification of Voters.* Generally, every person of either sex of the age of twenty-one, who is a natural-born or naturalised subject, and is rated as an occupier or owner of ratable land, is entitled to vote. The number of votes depends upon the value of the land in the following scale:—

QUEENSLAND MUNICIPALITIES.—PLURALITY OF VOTES.

Value of land	...	Less than £500.	From £500 to £1000.	£1000 and upwards.
Number of votes	...	1	2	3

In the case of joint owners or occupiers, each is to be considered the owner or occupier of land of a value equal to that of the whole divided by the number of owners or occupiers not exceeding three. If more than three persons are joint owners or occupiers, those whose names stand first on the rate book or valuation or return are to be taken. Companies may nominate their secretaries, managers, or directors for the purpose of voting.

(iii.) *Area, Population, Number of Dwellings, Rates, Assets and Liabilities of Cities, Towns and Shires.*—The following table gives particulars of the area, population, number of inhabited tenements, assets and liabilities of cities and towns, and of shires, for each year from 1908 to 1912:—

QUEENSLAND.—PARTICULARS OF CITIES AND TOWNS AND SHIRES, 1908 to 1912.

Year.	Municipality.	Area.	Population.	Number of Inhabited Dwellings.	Capital Value.	Assets.	Liabilities.		
							Government Loans.	Other.	Total.
		Square Miles.	No.	No.	£	£	£	£	£
1908	Cities and Towns	354	236,388	45,430	13,745,293	1,372,525	279,194	745,900	1,024,494
	Shires ...	669,901	333,619	70,294	31,279,792	277,086	111,754	52,908	164,662
	Total	670,255	570,007	115,724	45,025,085	1,649,611	390,948	798,208	1,189,156
1909	Cities and Towns	384½	241,795	45,365	13,637,273	1,366,435	253,391	815,540	1,068,931
	Shires ...	669,870½	344,752	73,480	33,677,538	301,976	111,740	53,643	165,383
	Total	670,255	586,547	118,845	47,314,811	1,668,411	365,131	869,183	1,234,314
1910	Cities and Towns	364½	247,435	44,804	13,774,440	1,406,521	242,924	767,481	1,010,405
	Shires ...	669,890	358,085	76,803	36,023,390	331,382	116,456	50,882	167,338
	Total	670,254½	605,520	121,607	49,797,830	1,737,903	359,380	818,363	1,177,743
1911	Cities and Towns	364½	232,083	46,310	14,905,268	1,425,403	214,903	794,733	1,009,636
	Shires ...	669,890½	368,292	77,731	38,482,811	367,078	127,079	58,741	185,820
	Total	670,255	600,375	124,041	52,788,079	1,792,481	341,982	853,474	1,195,456
1912	Cities and Towns	366	250,743	48,992	14,626,906	1,439,226	218,948	850,031	1,068,979
	Shires ...	669,528	393,172	83,021	40,365,614	426,694	141,288	84,894	226,182
	Total	669,894	643,915	131,953	54,991,920	1,865,920	360,236	934,925	1,295,161

(iv.) *Receipts and Expenditure of Cities, Towns, and Shires.*—The following table shows the receipts and expenditure (including loan moneys) of cities and towns and of shires, as well as the total receipts and expenditure of all municipalities, for each year from 1908 to 1912:—

**QUEENSLAND.—REVENUE AND EXPENDITURE OF CITIES, TOWNS, AND SHIRES,
1908 to 1912.**

Year.	Municipality.	Receipts.				Expenditure.					
		From Govern-ment.	From Rates.	From other Sources.	Total.	On Public Works.	Loan Redem-ption.	Office Expenses and Salaries.	Other Ex-penses.*	Total.*	
		£	£	£	£	£	£	£	£	£	
1908	(Cities and Towns	11,352	233,622	57,550	302,524	196,754	17,596	25,014	71,788	311,152	
	Shires ...	23,646	202,722	30,146	256,514	187,346	12,281	33,510	37,251	270,688	
	Total ...	34,998	436,344	87,696	559,038	384,100	29,877	58,524	109,039	581,840	
1909	(Cities and Towns	6,891	247,433	66,138	320,462	146,721	17,459	24,668	142,249	331,097	
	Shires ...	16,648	222,536	32,235	271,419	152,700	13,332	37,385	51,194	254,811	
	Total ...	23,539	469,969	98,373	591,881	299,421	30,791	62,253	193,443	585,908	
1910	(Cities and Towns	16,775	278,300	68,296	363,371	222,203	18,581	25,891	92,188	358,863	
	Shires ...	23,285	253,398	37,235	313,978	209,466	12,147	39,092	44,405	305,110	
	Total ...	40,060	531,698	105,591	677,349	431,669	30,728	64,983	136,593	663,973	
1911	(Cities and Towns	27,051	311,022	91,767	429,840	285,096	20,922	31,824	92,908	430,650	
	Shires ...	31,138	296,222	64,632	391,892	273,472	11,721	42,561	50,195	377,949	
	Total ...	58,189	607,244	156,299	821,732	558,568	32,643	74,385	143,003	808,599	
1912	(Cities and Towns	32,891	341,469	83,827	458,187	365,439	22,388	30,542	74,447	492,816	
	Shires ...	30,969	322,049	54,201	407,219	311,580	12,020	51,612	56,771	431,983	
	Total ...	63,860	663,518	138,028	865,406	677,019	34,408	82,154	131,218	924,799	

* Including interest on loans.

4. **South Australia.**—(i.) *Development of Local Government.* In the latter part of 1839 the first municipal law was passed in South Australia, which was thus the birthplace of municipal government in the Commonwealth. On the 31st October, 1840, the principles of self-government were practically adopted in Adelaide by the election of a mayor and council, consisting of nineteen members, and the system has since been extended throughout the settled parts of the State by the formation of district councils and municipal corporations, which are the two types of local authorities now in existence.

(ii.) *District Councils.* The first District Councils Act was passed in 1858, was amended in 1862, and was further amended and consolidated by the District Councils Act of 1876, which provided for the continuation of existing districts and for the establishment of new ones by proclamation on the petition of the ratepayers. The revenue of the councils consisted of rents, profits, and income from lands vested in the councils or over which the council had the control and management; fines and penalties enforced under the Act; fees for licenses; and general and special rates and loans. Provision was made for the election of councillors, their number, qualification, and retirement; for the election of auditors; the meetings, powers and functions of councils; the appointment of constables; revenue and expenditure; assessment of rates; and for making by-laws for various purposes. The Act of 1876 was amended from time to time, and was finally amended and consolidated by the Act which is now in force, namely, the District Councils Act 1887, which has in turn been amended in the years 1889, 1890, 1897, 1904, and 1905. These Acts were again amended by the Local Government Act 1910.

The powers and duties of district councils, together with the qualification necessary for councillors and electors, have been given *in extenso* in previous issues.

(iii.) *Municipalities.* Municipalities were first established under the Municipal Corporations Act of 1861, which, after providing for the extension of the powers and duties of the Corporation of the City of Adelaide, authorised the Governor, on petition of a majority of not less than two-thirds of the property-owners, to constitute any town, district, or place within the province, into a municipality. This Act and its amendments were consolidated in the Municipal Corporations Act 1880, which was amended from time to time until the year 1890, when it was repealed and its provisions consolidated by the existing Act, the Municipal Corporations Acts of 1890, which was in turn amended in 1893, 1896, and 1903. These Acts were again amended by the Local Government Act 1910.

A brief description of the Municipal Corporations Act of 1890, as well as the functions of municipal councils will be found in previous issues of this book.

(iv.) *Finances of District Councils and Corporations.* The subjoined tables shew the amounts of assessments and the revenue and expenditure of district councils and of corporations for the financial years 1901 and 1908 to 1912; the figures given are exclusive of the Main Roads Funds, particulars as to which may be found in the section of this book on "Roads and Bridges."

SOUTH AUSTRALIA.—ASSESSMENT, REVENUE, AND EXPENDITURE OF LOCAL AUTHORITIES, 1901 and 1908-12 (EXCLUSIVE OF MAIN ROADS FUNDS).

Year.*	Amount of Assessment (Annual Value).	Revenue.				Expenditure.	
		From Rates.	From Subsidies.	Other Sources.	Total.	On Public Works.	Total.
DISTRICT COUNCILS.							
	£	£	£	£	£	£	£
1901	1,412,507	63,321	15,225	51,919	130,465	65,406	128,499
1908	1,891,270	84,036	23,054	27,079	134,169	89,665	128,072
1909	1,849,200	89,551	20,718	30,783	140,552	104,834	146,468
1910	2,028,212	96,550	25,483	30,058	152,091	101,979	146,593
1911	2,143,530	106,963	28,017	29,195	164,175	120,369	161,125
1912.	2,145,091	115,427	28,848	34,974	179,249	140,225	182,610
CORPORATIONS.							
1901	1,177,850	87,289	9,733	49,342	146,364	55,533	146,091
1908	1,286,696	103,109	15,479	50,470	169,058	86,889	167,797
1909	1,340,755	108,480	15,828	57,837	182,145	97,118	177,897
1910	1,385,752	112,896	16,589	57,494	186,979	104,586	198,875
1911	1,499,012	133,550	16,420	62,536	212,506	105,738	217,313
1912	1,605,095	142,032	18,544	73,604	234,180	140,059	233,720

* Up to and including the year 1903, the financial year for Corporations ended on the 31st December, but after that date ends on the 30th November. The financial year for district councils ends on the 30th June.

5. *Western Australia.*—(i.) *Types of Local Authorities.* In this State there are three forms of local authorities, namely :—(i.) Municipalities, (ii.) Road Districts, and (iii.) Local Boards of Health. The first Municipalities Act was passed in 1871, but only a few districts were incorporated under it. In 1895 a more comprehensive measure, the Municipal Institutions Act, was passed, and after being amended from time to time was consolidated by the Municipal Institutions Acts 1902 and 1904. In 1906 the most recent enactment, the Municipal Corporations Act, was passed, repealing and consolidating previous enactments. The whole area of the State outside incorporated municipalities is divided into road districts, which are administered under the Roads Act 1902 and 1904. In municipalities the councils act as Health Boards for the purpose of administering the Public Health Act, while outside municipalities local Boards of Health may

be formed. In 1904, another local government measure, the Water Boards Act, was passed, under which Boards may be appointed for the control of waterworks, and rates may be levied for the purpose, the maximum being fixed at two shillings in the pound of ratable value.

(ii.) *Municipalities.* These are now regulated by the Municipal Corporations Act, which came into force on the 1st January, 1907. Provision is made for the continuation of existing municipalities, and the Governor is authorised to constitute new municipalities on petition signed by at least fifty property-holders of the district proposed to be incorporated; to unite adjoining municipalities on petition under their common seals; to sever any portion from a municipality on petition signed by a majority of the ratepayers, and to annex such portion to a contiguous municipality or road district.

(a) *Municipal Councils* consist of a mayor and councillors, the number of which depends upon the population of the municipality: if the population is less than 1000 there are six councillors, if from 1000 to 5000 there are nine councillors, and if the population is over 5000 there are twelve councillors, or three for each ward. Any male ratepayer of the age of twenty-one years, if a natural born or naturalised subject, is eligible for election as mayor or councillor, except ministers of religion, uncertificated bankrupts, prisoners, and certain other persons who may be disqualified on the ground of interest.

The duties and powers of municipal councils, the levying of rates, the qualification of voters and the classification of municipalities in Western Australia are fully referred to in previous issues. (Year Book No. 5, p. 1025.) Consideration of space prevents their inclusion in this edition.

(b) *Government Subsidies.* Grants are made annually to municipalities by way of subsidies on the amounts of rates collected. To entitle any council to participate in the allocation of the annual Parliamentary vote the council must have levied a minimum general rate of one shilling in the pound, and must have collected not less than £300 from such rate. Newly-constituted municipalities are, during the first year of existence, dealt with apart from the provisions of the general scheme, and are allowed a subsidy of £2 for every £1 of general rate collected; in subsequent years they participate according to the general provisions. No subsidy is paid on income from general rates exceeding £3000.

(iii.) *Area, Population, etc. of Municipalities.* Returns regarding the area, population, and valuation of municipalities are defective. They are shewn in the table hereunder:—

**WESTERN AUSTRALIA.—NUMBER, AREA, POPULATION, NUMBER OF DWELLINGS,
AND VALUATION OF MUNICIPALITIES, 1901 and 1908-12.**

Year ended the 31st October.		Number of Muni- cipalities.	Area	Population.	Dwellings.			Amount Payable in respect of Rates.
					Occupied.	Unoc- cupied.	Total.	
		No.	Acres.	No.	No.	No.	No.	£
1901	...	42	71,721	*96,807†	+20,989	+967	+21,956	‡
1908	...	47	90,078	135,525	29,208	2,112	31,320	144,344
1909	...	46	88,838	141,543	30,535	1,263	31,798	138,869
1910	...	42	75,716	\$143,808	\$31,064	\$1,652	\$32,716	139,835
1911	...	42	75,430	\$143,808	\$31,064	\$1,652	\$32,716	144,745
1912	...	38	71,203	154,005	32,727	1,613	34,340	152,143

* Census figures, 1901. † Returns for thirty-nine municipalities only. ‡ Not available.
‡ Census figures, 1911.

Complete particulars of improved or unimproved capital values are not available. In the year 1911 the capital value of ratable property in municipalities was £20,362,374.

(iv.) *Revenue and Expenditure of Municipalities.* The following table gives particulars as to the revenue and expenditure of municipalities during the years 1901 and 1908 to 1912 :—

**WESTERN AUSTRALIA.—REVENUE AND EXPENDITURE OF MUNICIPALITIES,
1901 and 1908-12.**

Year ended the 31st October	Revenue.				Expenditure.			
	From Rates.	From Govt. Grants.	From other Sources	Total.	Works and Improvements.	Disbursements in respect of Loans.	Other Expenses.	Total.
	£	£	£	£	£	£	£	£
1901*	78,021	66,860	82,228	227,109	111,241	23,809	79,365	214,415
1908 ...	139,228	67,315	176,040	382,583	103,943	59,037	239,882	402,862
1909 ...	138,445	37,301	207,982	383,728	83,283	61,137	225,645	370,065
1910 ...	138,719	13,337	230,407	382,463	87,998	67,168	244,650	399,816
1911 ...	144,993	27,944	252,743	425,680	75,697	69,896	283,402	428,995
1912 ...	148,538	25,902	†834,991	1,009,431	73,576	104,475	735,907	913,958

* Incomplete. † Including £525,000 loan, raised for purchase of electric light and gasworks.

(v.) *Assets and Liabilities of Municipalities.* The following table gives particulars respecting the assets and liabilities of municipalities at the end of each financial year 1901 and 1908 to 1912 :—

**WESTERN AUSTRALIA.—ASSETS AND LIABILITIES OF MUNICIPALITIES,
1901 and 1908-12.**

Year ended the 31st October	Assets.					Liabilities.		
	Balance in Hand.*	Value of Property owned by Municipalities.	Accrued Sinking Funds for Redemption of Loans.	Other Assets.	Total.	Outstanding Debts and Bonds.	Other Liabilities.	Total.
	£	£	£	£	£	£	£	£
1901† ...	37,259	214,984	42,311	13,432	307,986	321,000	19,762	340,762
1908 ...	27,291	605,165	143,434	58,988	834,878	757,494	42,321	799,815
1909 ...	41,216	628,205	152,416	56,705	875,542	795,105	36,352	831,460
1910 ...	24,603	669,499	174,119	58,548	926,769	844,844	53,304	898,148
1911 ...	19,570	703,044	195,892	48,884	967,390	893,064	55,615	948,679
1912 ...	108,162	1,154,568	281,477	53,032	1,597,239	1,459,282	50,814	1,510,096

* Including bank balance, cash in hand, and fixed deposit. † Incomplete.

(vi.) *Road Districts.* The whole area of the State, outside incorporated municipalities, is divided into districts, the executive powers being vested in elective boards. These districts were originally formed solely for the purpose of controlling roads and bridges, but their powers and duties have been extended, so that at the present time they correspond closely to the shires of the other States of the Commonwealth. The enactments at present governing the administration of the Road Boards are the Roads Act 1911, the Parks and Reserves Act, the Cattle Trespassing Act, the Width of Tyres Act, the Cart and Carriage Licenses Act, and the Dog Act. The general powers and duties of the Boards are described in previous issues of this book.

(vii.) *Boards of Health.* These may be established under the Public Health Act 1911, which came into force on the 1st June, 1911, either within or outside of municipal boundaries. In the former case the Act is administered by the municipal councils, while in the latter case districts whose borders are continuous with road districts are administered by the local authorities. Those not continuous with road districts are administered by special Boards. The revenue of these Boards consists chiefly of moneys received

from health rates and sanitary fees, and the largest item of expenditure is directly connected with the sanitary service. The following table shews particulars of the receipts and expenditure of the various Boards—both municipal and extra-municipal—during the years 1901 and 1908 to 1912 :—

**WESTERN AUSTRALIA.—RECEIPTS AND EXPENDITURE OF LOCAL HEALTH
BOARDS, 1901 and 1908-12.**

Year ended the 31st October.	Revenue.			Expenditure.		
	From Public Health Rate.	From other Sources.	Total.	On Sanitary Services.	Other Expenses.	Total.
	£	£	£	£	£	£
1901 ...	15,280	17,477	32,707	18,787	12,992	31,779
1908 ...	⁴ 36,304	41,674	77,978	¹² 43,830	¹² 34,981	¹² 78,811
1909 ...	⁵ 39,447	50,688	90,135	¹² 49,502	¹² 38,465	¹² 87,967
1910 ¹ ...	⁶ 38,741	⁹ 52,095	90,836	56,278	34,144	90,442
1911 ² ...	⁷ 38,398	¹⁰ 56,807	95,205	59,639	32,919	92,558
1912 ³ ...	⁸ 47,354	¹¹ 60,525	107,879	69,703	40,552	110,255

1. Exclusive of 10 boards which did not furnish returns, and 14 boards which were non-active.
 2. Exclusive of 1 board which furnished no returns and 22 boards which were inactive. 3. Exclusive of 15 non-active boards and 1 that sent in no return. 4. Including sanitary rates, £17,707.
 5. Including sanitary rates, £16,804. 6. Including sanitary rates, £17,986. 7. Including sanitary rates, £17,427. 8. Including sanitary rates, £18,342. 9. Including sanitary fees and charges, £13,341. 10. Including sanitary fees and charges, £50,617. 11. Including sanitary fees and charges, £53,790. 12. Exclusive of expenditure of one extra-municipal board.

On the 31st October, 1912, there were thirty-eight Local Boards of Health within municipalities, and on the 30th June, 1912, eighty-seven extra-municipal Boards. In and after 1911, the financial year of Municipal Local Health Boards ended 31st October, and that of extra-municipal Boards, 30th June.

6. Tasmania.—(i.) Development of Local Areas. In this State the city of Hobart was incorporated by special Act in the year 1852, but it was not until 1858, when the Rural Municipalities Act was passed, that a general scheme for the establishment of municipalities was extended throughout the State. This Act was amended from time to time without, however, altering its chief characteristics. In 1869 a Roads Act was passed, and after being amended at various times was consolidated in 1884. Under the provisions of these Acts parts of the State were placed under the control of Town Boards and Road Trusts. The general rate under the Municipalities Act was limited to one shilling and sixpence in the pound of annual value, while special rates could be levied in rural districts, provided that the general and special rates together did not exceed one shilling and sixpence in the pound.

(ii.) Acts now in Force. In 1906 the whole of the Acts dealing with local authorities were amended and consolidated by the Local Government Act of that year. The whole State, with the exception of the urban municipalities of Hobart and Launceston, is divided into municipal districts, and every Rural Municipality, Town Board, Main Road District, Road District, Local Health District, Fruit District, Rabbit District, School District, and Public Recreation Ground District included in any municipality established by the Act is abolished. Each district is incorporated and is under the control of a warden and councillors, who, in addition to the specific duties and powers imposed and conferred by the Act of 1906, are vested with powers and authorities under the following Acts :—The Codlin Moth Act 1888, the Rabbits Destruction Act 1889, the Public Health Act 1903, the Education Act 1885, the Roads Act 1884, the Rural Municipalities Act 1865, the Police Act 1905, the Town Boards Act 1896, the Public Recreation Grounds Act 1888, the Cemeteries Act 1865, and the Californian Thistle Act 1883. The Governor is authorised to unite, subdivide, or abolish municipalities or wards on petition, and may

do so without petition if in any municipality there is at any time no council or an insufficient number of councillors to form a quorum. The Act of 1906 was amended in 1908, and again in 1911.

(a) *Formation of Councils.* In the case of municipalities not divided into wards the council is to consist of the number of members, being a multiple of three, assigned to it by the Governor, while the councils of municipalities which are subdivided consist of three councillors for each ward. Any resident elector is eligible to act as a councillor unless he is disqualified as being an interested person, a bankrupt or convict, or as undergoing a sentence of imprisonment, or as insane. The warden is elected by the councillors from their own body.

The functions of councils, their borrowing powers, the levying of rates, and the constitution of local and water districts have been referred to in detail in previous issues.

(b) *Qualification of Electors.* Both owners and occupiers of property within a municipality are allowed plurality of votes according to the following scale:—

Annual Value of Property	Under £30.	£30 to £80.	£80 to £160.	£160 to £240.	£240 to £360.	£360 and upwards.
Number of Votes	1	2	3	4	5	6

In the case of joint owners or occupiers the number of votes according to the above scale is equally divided as far as possible, and the vote or votes which cannot be so divided may be given by such one of the joint owners or occupiers as may be appointed by the others. The provisions of the Acts relating to voting by post at parliamentary elections may be made applicable to any municipal election on the petition of the council to the Governor.

(iii.) *Annual Value, Revenue, and Expenditure of Municipalities.*—The following table shews the annual value, total receipts, and expenditure of municipalities for the years 1908 to 1912 inclusive:—

**TASMANIA.—ANNUAL VALUE, REVENUE, AND EXPENDITURE OF MUNICIPALITIES,
1908 to 1912.**

Year.	Number of Municipalities.	Annual Value of Ratable Property.	Revenue				Expenditure.†
			From Rates.	From Govt.	From other Sources.*	Total.	
		£	£	£	£	£	£
1908	...	51, 1,340,243	142,466	40,254	186,466	369,186	353,699
1909	...	51, 1,404,328	173,453	44,293	92,244	309,990	318,501
1910	...	51, 1,459,917	147,750	35,616	87,994	271,360	266,108
1911	...	51, 1,492,533	150,233	35,215	83,365	280,165	307,334
1912	...	51, 1,524,789	159,290	26,051	107,935	293,276	276,794

* Including sums derived from loans. † Including repayments of loans.

According to the latest estimate made by the Commissioner of Taxes the capital value of ratable property in 1911 was £30,924,993.

(iv.) *Total Revenue and Expenditure of Local Bodies.*—Particulars as to Road Boards and Road Trusts are given in the chapter of this book on "Roads and Bridges." In addition to the local authorities already mentioned, Marine Boards have been established at seven ports in Tasmania for the purposes of constructing and maintaining wharves and jetties and of controlling all matters relating to the shipping in the respective ports. Twenty water trusts and forty cemetery trusts have also been established in connection with municipal bodies. The subjoined statement shews the total revenue and expenditure for all local bodies, exclusive of all amounts contributed by the General Government, during each financial year from 1910 to 1913 inclusive:—

TASMANIA.—REVENUE AND EXPENDITURE OF ALL LOCAL BODIES, EXCLUSIVE OF AMOUNTS CONTRIBUTED BY THE GENERAL GOVERNMENT, 1910 to 1913.

Particulars.					1909-10.	1910-11.	1911-12.	1912-13.
*REVENUE.								
					£	£	£	£
Marine Boards and Lighthouses	...	...	...	...	74,723	72,507	72,676	72,671
Municipalities	...	...	...	...	309,990	271,360	280,165	267,225
Road and Bridge Trusts	...	...	...	...	†	†	†	†
Cemetery Trusts	...	...	...	...	†	\$894	918	1,147
Town Boards	...	...	...	...	†	†	†	†
Water Trusts	...	...	...	...	2,325	2,267	2,272	2,805
Total	...	...	...	...	387,038	347,028	356,031	343,848
†EXPENDITURE.								
					£	£	£	£
Marine Boards and Lighthouses	...	...	...	...	82,627	68,894	68,529	78,322
Municipalities	...	...	...	...	318,501	266,108	307,334	270,743
Road and Bridge Trusts	...	...	...	...	†	†	†	†
Cemetery Trusts	...	...	...	...	†	\$769	902	856
Town Boards	...	...	...	...	†	†	†	†
Water Trusts	...	...	...	...	1,923	4,138	1,834	2,065
Total	...	...	...	...	403,051	339,909	378,599	351,986

* Exclusive of amounts contributed by the general Government. † Exclusive of expenditure from Government contributions. ‡ Included in municipalities under the new Local Government Act. § Exclusive of a number of cemetery trusts incorporated in the newly organised municipalities.

§ 3. Water Supply, Sewerage and Drainage.

1. **New South Wales.**—(i.) *Sydney Metropolitan Board of Water Supply and Sewerage.* Prior to the year 1888 the main water supply and sewerage systems of Sydney and suburbs were under the control of the City Corporation, while several of the suburban councils had constructed local systems, but in that year the Government, with the object of placing the administration of both water supply and sewerage systems throughout the County of Cumberland under the control of an independent body, passed an Act authorising the establishment of the Metropolitan Board of Water Supply and Sewerage. This Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and country municipalities in the County of Cumberland. The Board is under the general supervision of the Minister for Works—a provision considered necessary since the loan expenditure of the Board forms part of the public debt of the State.

(a) *Present System.* In the year 1850 authority was given by the Legislative Council to the City Corporation to construct water and sewerage works. Under this authority a water supply scheme was adopted and carried out, at a cost of nearly £1,750,000, by which the waters of the streams draining into Botany Bay were intercepted and pumped into three reservoirs. This system has now been superseded, the metropolitan water supply being at present obtained from the watersheds of the Nepean, Cataract, and Cordeaux Rivers. The principal reservoirs in connection with the scheme are the "Cataract" and "Prospect" dams. A fuller description of these dams will be found in previous issues of this book (see Year Book No. 5, p. 984), but their dimensions are here given:—

SYDNEY WATER SUPPLY.—CATARACT AND PROSPECT DAMS.

Dam.	Height above Foundation.	Width at Top.	Thickness at Bottom.	Length.	Area of Reservoir	Capacity of Reservoir.
	Feet.	Feet.	Feet.	Feet.	Acres.	Gallons.
Cataract ...	192	16½	150	811	2,104	20,743,200,000
Prospect ...	85½	30	523	7,300	1,266½	11,029,200,000*

* Of which 5,527,000,000 gallons are available by gravitation.

(b) *Aqueducts and Mains.* The water is drawn off from the Prospect reservoir by a canal, five miles in length, to the Pipe Head Basin, situated 16½ miles from Sydney. It is then conveyed for a further distance of five miles to Potts' Hill reservoir, which has a capacity of 100,000,000 gallons, covers twenty-four and a half acres, and is designed to tide the city over any interruption of supply from Prospect, and to prevent fluctuation of pressure. Thence the water passes through a screening tank, and proceeds towards the city in two 48-inch cast-iron mains. A fuller description of the system of reticulation adopted will be found in previous issues.

(c) *Storage Reservoirs.* In connection with the water supply there are in all thirty-five service reservoirs, with a total maximum capacity of 55,693,000 gallons.

(d) *Revenue, Expenditure, and Capital Cost of Sydney Waterworks.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan waterworks for 1901 and 1909-13.

SYDNEY WATERWORKS.—REVENUE, EXPENDITURE, AND CAPITAL COST, 1901 and 1909-13.

Year Ended 30th June.	Revenue.	Working Expenses.	Capital Cost exclusive of Items on which Interest is not charged.	Percentage of Working Expenses to Revenue.	Percentage of Revenue to Capital Cost.	Interest Payable on Capital Cost.	Net Profit after paying Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ...	203,348	49,270	4,300,552	24.22	4.72	152,338	1,745
1909 ...	267,519*	80,282	5,146,303	30.01	5.19	185,591	1,646
1910 ...	284,943†	93,027	5,286,917	32.64	5.38	184,486	7,430
1911 ...	299,442	99,355	5,420,813	33.18	5.52	192,486	7,601
1912 ...	329,605	112,958	5,606,268	34.27	5.87	198,443	18,204
1913 ...	361,187	126,795	5,907,125	35.11	6.11	200,918	33,474

* Rate reduced from 7d. to 6d. from 1st July, 1908, and water-meter rents abolished. † Meter rentals reimposed from 1st July, 1909, and meterage charge reduced from 1s. to 11d. per 1000 gallons.

(e) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1909-13, shewing the increase in the supply of water in Sydney and suburbs:—

SYDNEY WATERWORKS.—NUMBER OF GALLONS, HOUSES, AND POPULATION SUPPLIED, 1901 and 1909-13.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year.	Aver. Daily Supply.		Mains Laid.
					Per House.	Per Head of Estimated Population	
	No.	No.	1000 Gallons.	1000 Gallons.	Gallons.	Gallons.	Miles.
1901	98,298	491,000	21,583	7,877,677	219	43.95	40
1909	128,444	642,220	25,911	9,457,660	201	40.34	71
1910	133,788	668,940	26,903	9,819,657	201	40.21	100
1911	139,237	696,185	29,006	10,587,433	208	41.55	102
1912	146,236	731,180	30,522	11,141,700	208	41.74	74
1913	155,213	776,065	32,594	11,896,810	210	41.99	100

(f) *Other Water Supply Systems under the Metropolitan Board.* In addition to the main metropolitan water supply system there are certain other systems within the County of Cumberland managed by the Metropolitan Board. (a) The Richmond waterworks are entirely unconnected with the Sydney supply. Water is supplied to the town by a small pumping station on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean. (b) The Wollongong waterworks are also unconnected with the Sydney supply. The source of supply is the Cordeaux River and the catchment area is 2400 acres in extent. The total capacity of the reservoir is 173,000,000 gallons and the total length of the main about nineteen miles, exclusive of the extension to Port Kembla and Unanderra. (c) The Manly waterworks are supplied by a special catchment area of about 1300 acres, and are also connected with the metropolitan system by a 10-inch main from Mosman. (d) The water-supply for the districts of Campbelltown, Camden and Narellan, and Liverpool is not drawn from the main Sydney supply through Potts' Hill, but is received by gravitation from the upper canal at Prospect. For further details of these water-supply systems see previous issues.

(ii.) *Metropolitan Sewerage System.* The system which is now under the control of the Metropolitan Board of Water Supply and Sewerage will be found fully described in previous issues. (See Year Book No. 5, p. 986).

(a) *Revenue, Expenditure, and Capital Cost of Sydney Sewerage Systems.* The following table gives particulars as to the revenue, expenditure, and capital cost of the metropolitan sewerage systems for 1901 and 1909-13:—

**SYDNEY SEWERAGE SYSTEMS.—REVENUE, EXPENDITURE, AND CAPITAL COST,
1901 and 1909-13.**

Year ended the 30th June.	Revenue.	Working Expenses.	Capital Cost, exclusive of Items on which Interest is not charged.	Percent- age of Expendi- ture to Revenue.	Percent- age of Revenue on Capital Cost.	Interest Payable on Capital Cost.	Profit or Loss after Payment of Working Expenses and Interest.
	£	£	£	%	%	£	£
1901 ...	125,290	45,395	3,066,147	36.23	4.05	106,475	*—26,580
1909 ...	214,212†	68,575	4,225,239	32.01	5.06	151,317	— 5,680
1910 ...	223,131	70,851	4,351,331	31.75	5.12	151,943	337
1911 ...	234,208	79,636	4,496,290	34.00	5.20	159,070	— 4,498
1912 ...	250,826	82,246	4,769,449	32.78	5.25	166,771	1,809
1913 ...	266,292	91,034	5,083,263	33.95	5.27	171,957	3,241

* Represents a loss. † Rate reduced from 10d. to 9½d. from 1st July, 1908.

(b) *Number of Houses Drained, Population, and Length of Sewers in Sydney Metropolitan Sewerage Systems.* The following table gives particulars as to the number of houses drained, the population, and the length of sewers within the Sydney metropolitan area for 1901 and 1909 to 1913:—

**SYDNEY SEWERAGE SYSTEMS.—NUMBER OF HOUSES DRAINED, POPULATION,
AND LENGTH OF SEWERS, 1901 and 1909-13.**

Year ended the 30th June.	Number of Houses Drained.	Estimated Population Served.	Total Length of Sewers.	Total Length of Storm- water Drains.	Ventilating Shafts Erected.	Sewers Ven- tilated.
	No.	No.	Miles.	Miles.	Feet.	Miles.
1901 ...	75,416	370,000	515.62	25.91	194,667	450
1909 ...	99,442	497,210	760.16	47.30	299,910	714
1910 ...	102,896	514,480	793.55	47.82	344,820	756
1911 ...	108,012	540,060	825.20	48.85	376,900	795
1912 ...	110,737	553,685	863.29	49.63	382,654	809
1913 ...	114,690	573,450	890.53	52.24	401,344	853

(iii.) *The Hunter District Water Supply and Sewerage Board.* The waterworks of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892 a special Act was passed establishing an independent Board to control the water-supply works. Fuller reference is made to the constitution of this Board and to the municipalities and incorporated areas under its jurisdiction in previous issues of the Year Book. (See Year Book No. 5, p. 988.)

(a) *Description of Waterworks.* The water supply is pumped from the Hunter River about a mile and a half up stream from West Maitland into a settling-tank of 1,390,500 gallons capacity, thence through filter beds into a clear water tank holding 589,500 gallons. It is then pumped from the clear water tank into two summit reservoirs, one of which supplies East and West Maitland, Morpeth, and Maitland, while the other supplies the other districts under the control of the Board. There is also a storage reservoir of 172,408,100 gallons capacity, which is resorted to when the river water is too turbid. In these districts there are nine service reservoirs, having a total capacity of nearly 4,000,000 gallons supplied by gravitation. On the hill at Newcastle there is also a high-level iron tank with a capacity of 20,000 gallons, which is supplied by a small pumping engine on the roof of the Newcastle reservoir. The total length of water mains is 354 miles.

(b) *Water Supply, Capital Cost, Revenue, and Expenditure.* By the Act of 1892 referred to above and an Amending Act of 1894 the capital debt of the Board was to be liquidated by annual instalments distributed over 100 years with interest at $3\frac{1}{2}$ per cent. By a further amending Act of 1897 the repayment of expenditure on permanent works was abrogated, and the annual instalments were to be paid in liquidation of the cost of renewable works to be fixed by the Government from year to year. The capital debt of the Board to the Government at 30th June, 1913, was in respect of water supply £512,862, and £292,390 in respect of sewerage. In the subjoined table particulars are given as to the revenue and expenditure, and also as to the number of houses and population supplied in 1901 and 1909 to 1913:—

PARTICULARS OF THE HUNTER DISTRICT WATER SUPPLY, 1901 and 1909 to 1913.

Year ended 30th June.			Revenue.	Working Expenses (including Interest).	Houses Supplied.	Estimated Population Served.	Supply.	
							Daily Average.	Total.
			£	£	No.	No.	1000 Gallons.	1000 Gallons.
1901	...	...	27,405	30,948	9,086	45,400	1,005	366,889
1909	...	...	43,395	41,184	15,679	78,395	1,766	644,689
1910	...	...	46,767	43,126	16,446	82,230	1,650	602,497
1911	...	...	45,711	45,420	17,164	85,820	1,850	675,214
1912	...	...	47,788	47,920*	17,796	88,980	2,026	739,539
1913	...	...	53,673	49,043	18,405	92,025	2,366	863,692

* Inclusive of an instalment of £10,574 to the sinking fund for reconstruction of renewable works.

The average daily consumption of water for all purposes per inhabitant was 25.71 gallons during the year 1913, as against 22.77 gallons during the previous year.

(c) *Sewerage Works.*—Considerable progress has been made by the Department of Public Works with the construction of the sewerage works for Newcastle and suburbs. The scheme is designed on the separate system, and will deal with the sewage partly by gravitation and partly by pumping. Up to the 30th June, 1913, about 51 miles of sewers, connecting with 3457 separate properties, were under the control of the Board. For the financial year 1912-13 the revenue was £12,472 and the expenditure £16,960, the latter amount including a £2231 instalment to the Sinking Fund for the reconstruction of renewable works.

(iv.) *Water Supply and Sewerage in Country Towns.* With the object of assisting municipalities to construct systems of water supply and sewerage, the Country Towns Water Supply and Sewerage Act of 1880 was passed, but has since been amended by the

Acts of 1887, 1894 and 1905. The principal provisions of these Acts are more fully dealt with in previous issues of this book. (See Year Book No. 5, p. 989.)

(a) *Waterworks.* Up to the 30th June, 1913, forty-nine country municipalities had availed themselves of the privileges of the Acts as regards waterworks, all of which at that date had been completed and handed over by the Government. The total amount expended on these works was £900,454, and the total of the sums payable annually for a period of 100 years was £34,351, including interest at the rate of $3\frac{1}{2}$ per cent., the first repayments having become due at various dates, starting from the end of the year 1893. In the calculation of these repayments the interest on the expenditure has been added, and any payments by the councils, as well as sums remitted under the authority of the Act, have been deducted. Other schemes of water supply and extensions of existing works are in course of construction. A number of other municipalities have constructed works out of their own resources.

(b) *Sewerage Works.* Only eleven municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns. On the 30th June, 1913, the capital debt of these systems was £169,393, the amount payable annually to the Government being £6479. Other sewerage systems, as well as extensions to existing systems, are in course of construction.

2. *Victoria.*—(i.) *The Melbourne and Metropolitan Board of Works.* This Board was established by an Act of 1890, and entered upon its duties in March, 1891. The Board consists of forty members, one of whom is a chairman elected every four years by the other members. Nine members are elected by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood, and one each by the other suburban municipal councils returning a representative. The district over which the Board exercises control consists of fifteen cities, five towns, two shires, and parts of three others, or twenty-five municipalities in all, comprising a total area of 109,009 acres, and containing an estimated population on the 31st December, 1913, of 689,700 (including those supplied with water outside the Board's area). The waterworks for the supply of Melbourne and suburbs were originally carried out by the Government, which had for that purpose contracted loans amounting to £2,389,934; these works were vested in the Board in 1891. The primary object of the creation of the Board was not, however, to take over these works, but was to supply the long called for and pressing want of a sewerage system for the metropolis. To carry out its work the Board is authorised to borrow £9,750,000, exclusive of the loans contracted by the Government for the purpose of waterworks and taken over by the Board. The liability on Government loans on the 30th June, 1913, was £1,559,786, and for loans raised by the Board was £9,603,500. The Board is still empowered to borrow £976,648 before reaching the limit of its borrowing powers.

(a) *Total Cost of Water Supply and Sewerage.* The subjoined table shews the total cost of construction and maintenance of water supply and sewerage from 1853 to 1913.

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—TOTAL COST OF CONSTRUCTION AND MAINTENANCE OF WATER SUPPLY AND SEWERAGE, 1853 to 1913.

Period.	Water Supply.		Sewerage.			Total.
	Con- struction.	Main- tenance.	Con- struction.	Main- tenance.	Working Expenses.	
	£	£	£	£	£	£
1853 to 1890-1 ...	3,378,246	149,622	...	...	...	3,527,868
1891-2 to 1900-1 ...	336,957	165,124	3,307,764	33,698*	32,525*	3,876,068
1901-2 to 1910-11 ...	299,045	204,045	2,959,997	68,025	246,483	3,777,595
1911-12 to 1912-13	449,409	57,182	400,511	14,222	84,963	1,006,287
Total ...	4,463,657	575,973	6,668,272	115,945	363,971	12,187,818

* From the 30th June, 1897, to the 30th June, 1901.

(b) *Revenue and Expenditure of Melbourne and Metropolitan Board of Works.* The following table shews the actual receipts and expenditure, and also the loan receipts and expenditure of the Board during 1901-2 and 1908 to 1913 :—

MELBOURNE AND METROPOLITAN BOARD OF WORKS.—REVENUE AND EXPENDITURE DURING EACH YEAR, 1901-2 and 1908 to 1913.

Particulars.	1901-2.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
ORDINARY RECEIPTS.						
Water supply	£ 171,956	£ 241,790	£ 248,356	£ 253,002	£ 267,917	£ 295,963
Sewerage, etc.	124,696	242,296	253,756	267,444	272,365	287,507
Live stock—Metropolitan farm	19,929	22,153	31,289	35,016	63,225	57,787
Interest { Water supply	15	15	138	830	953	2,277
{ Sewerage	17,448	15,929	10,229	8,995	8,885	8,695
Total	334,029	522,183	543,768	565,287	613,345	652,229

ORDINARY EXPENDITURE.						
General management	33,621	33,984	34,863	35,779	40,104	41,007
Live stock, etc.—Metropolitan farm	16,702	20,316	17,900	19,336	46,283	44,130
Maintenance { Water supply	22,205	24,643	24,944	25,016	30,234	34,508
{ Sewerage	24,396	38,016	42,921	45,665	47,797	50,433
Interest { Water supply	102,670	102,297	101,578	105,760	112,886	116,716
{ Sewerage	192,952	280,647	286,655	293,608	297,962	307,630
Total	392,546	499,903	508,861	525,164	575,266	594,424

LOAN RECEIPTS.						
Water supply	1,636	2,435	5,272	4,788	5,982	12,315
Sewerage	88,425	67,771	61,509	56,313	59,907	61,315
Proceeds of loans	396,238	429,595	257,853	291,310	322,223	307,952
Miscellaneous	...	15,246	9,104	9,238	12,399	28,355
Total	486,299	515,047	333,738	361,649	400,511	409,937

LOAN EXPENDITURE.						
Water supply construction	17,058	67,271	35,984	98,145	133,149	339,753
Sewerage construction	410,760	272,508	331,214	286,035	245,911	259,461
Expenses in floating and redemption of loans	5,200	220,189	2,677	2,936	5,393	130,159
Miscellaneous	*4,293	24,961	18,002	26,288	35,638	47,474
Total	428,725	593,929	387,877	413,404	420,091	776,847

* Excess of stock distribution (£7020) over purchases (£2727).

(ii.) *Melbourne Metropolitan Water Supply.*—In December, 1857, the construction of the Yan Yean Reservoir system was completed. A description of the conditions that prevailed in Melbourne prior to that date is given in previous issues of the Year Book.

(a) *Development of System.* The following statement shews the development which has taken place in the water supply system of Melbourne during the fifty-six years since its inception :—

MELBOURNE WATER SUPPLY SYSTEM, 1857 to 1913.

Year.	Population* Served.	Capital Cost.	Charge per 1000 Gallons.	Rate in £	Reticulation, Mains, &c., Mileage.	Supply in Gallons. Average daily.
1857 ...	95,442	£ 748,974	10/- and 6/-	1/-	104	2,250,000
1913 ...	639,700	4,463,657	1/-	7d.	1,509	39,380,167

* On the 31st December.

(b) *Description of Water Supply Systems.* The water supply of Melbourne consists of two main systems—the Yan Yean and the Maroondah, together with the high level system.

A full description of these systems has been given in previous issues of this book (see No. 6, p. 983).

The three reservoirs at Preston, which are the main distributors of the central city supply, contain 13,500,000, 24,500,000, and 26,300,000 gallons respectively, the third and last being built during 1912-13.

The work is approaching completion of diverting the waters of the O'Shanassy River, a tributary of the Yarra, by an open aqueduct and pipe line of an aggregate length of about 49½ miles, delivering water to the eastern portion of the metropolis by way of Mitcham and Surrey Hills. The total capacity of the scheme is to be 20,000,000 gallons per day, but capable of enlargement to 60,000,000 gallons. The scheme is estimated to cost £450,000. The watershed of the O'Shanassy River, containing 33,000 acres, has been excised from the permanent forests area, and a Crown grant was issued to the Board on the 28th January, 1910.

(c) *Catchment Areas, Reservoirs, and Aqueducts.* (i.) *Drainage Areas.* The whole of the catchment areas are absolutely free from population, cultivation, or stock grazing, and are under the complete control of the Metropolitan Board of Works. The present drainage areas from which the water is delivered are as follows:—

MELBOURNE WATER SUPPLY.—CATCHMENT AREA IN ACRES, 1913.

Silver and Wallaby Creeks.	Plenty River and Jack's Ck.	Yan Yean Reservoir Catchment.	Maroondah Catchment.	O'Shanassy Catchment.	Total.
12,000	12,000	5,000	40,000	33,000	102,000

All the water is delivered by gravitation, no pumping being required in any portion of the area supplied.

(ii.) *Storage Reservoirs.* In connection with distribution there are twelve service reservoirs having a total capacity of 120,300,000 gallons. The total daily quantity of water which can be sent into Melbourne is as follows:—

System	Yan Yean.	Maroondah.	High Level Main	Total Supply.
Gallons per day	33,000,000	28,000,000	9,000,000	70,000,000

(d) *Quantity of Water, Number of Houses, and Population Supplied.* The following table gives various particulars for the years 1901 and 1909-13, shewing the increase in the supply of water in Melbourne and suburbs:—

MELBOURNE WATERWORKS.—NUMBER OF HOUSES, POPULATION, AND WATER SUPPLIED, 1901 and 1909-13.

Year Ended 30th June.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply.	Total Supply for the Year ended 30th June.	Average Daily Supply.		Rate Levied.	Assess-ments of Tenements Served by Metro-politan Water Supply.
					Per House.	Per Head of Esti-mated Popu-lation.		
	No.	No.	,000 Gallons.	,000 Gallons.	Gallons.	Gallons.		£
1901 ...	104,548	491,780	28,732	10,487,007	274.8	58.4	6d. in the £	3,479,721
1909 ...	119,650	549,690	31,828	11,617,355	266.0	57.9		4,672,324
1910 ...	123,227	565,010	34,508	12,595,501	280.0	61.1	7d. in the £	4,789,265
1911 ...	128,036	581,500	32,840	11,966,503	256.5	56.5		5,045,848
1912 ...	133,122	594,250	38,507	14,038,509	289.3	64.8		5,382,101
1913 ...	140,351	614,300	39,380	14,373,761	280.6	64.1		5,670,801

(e) *Total Cost of Construction, Revenue, Expenditure and Net Profits, 1854 to 1913.* The following table shews the total cost of construction, the revenue, expenditure, and net profits for various periods up to 30th June, 1911, and for the financial years 1911-12 and 1912-13:—

**MELBOURNE WATERWORKS.—CONSTRUCTION, COST, REVENUE, EXPENDITURE,
AND NET PROFITS, 1854 to 1913.**

Period.	Capital Cost.*	Annual Revenue.†	Cost of Maintenance and Manage- ment.‡	Percentage of Working Expenses to Revenue.	Interest.§	Surplus.
	£	£	£	%	£	£
Total to 1890-1	3,378,246	3,150,055	420,833	...	1,021,676	1,707,546
1891-2 to 1900-1	336,957	1,686,025	367,506	21.80	1,021,181	297,338
1901-2 to 1910-11	299,045	2,054,355	384,871	18.73	1,026,362	643,122
1911-12 to 1912-13	449,409	564,647	103,030	18.25	226,373	235,244
Total ...	4,463,657	7,455,082	1,276,240	...	3,295,592	2,883,250

* Works commenced in 1853. † Revenue commenced in 1854. ‡ Returns for expenditure commenced in 1859. § First interest paid in 1856.

(iii.) *Melbourne Sewerage.*—As stated above, the chief object of the creation of the Melbourne and Metropolitan Board was to carry out an efficient system of sewerage. Old Melbourne used to be a city of cesspits, and it was not until the latter sixties that these were abolished, filled up, and the movable pan system gradually adopted throughout the whole metropolitan area, with night removal. The cost of removal in 1894 was about £90,000, equal to a capital expenditure of £1,750,000. This objectionable system has been displaced by the water carriage system throughout the greater portion of the metropolis, and in other parts the work of reticulation is now proceeding.

(a) *Description of Sewerage Systems.* The whole of the sewage of the metropolis is being gradually collected by means of two principal main sewers and a subsidiary main leading to the pumping station at Spotswood. A description of the scheme may be found in previous issues. (See Year Book No. 5, p. 1007.) On the 30th June, 1913, the sewerage system had been practically completed in the following districts:—Port Melbourne, South Melbourne, Melbourne (except very small portions of Flemington and Kensington), Richmond, Prahran, Collingwood, Fitzroy, St. Kilda, Essendon, and nearly the whole of Brighton, Malvern, and Williamstown. The greater part of Caulfield, Footscray, Kew, Brunswick, and Hawthorn had also been dealt with, together with the thickly populated portions of Camberwell, Northcote, Coburg, Preston, and Moorabbin, besides small portions of Nunawading and Heidelberg.

(b) *Metropolitan Sewage Farm.* The farm originally contained 8847 acres, situated on the western side of the Werribee River. The price paid for the land was £17 10s. per acre (including compensation for severance), which in its virgin unimproved state cost the Board in 1892, £159,573. This sum included the purchase of a strip of land 11½ miles long (168½ acres) on which the greater portion of the outfall sewer is constructed. Since 1911, 1370 acres have been purchased, making the total area of the farm 10,217 acres at 30th June, 1913, its total cost to that date being £489,740. About 31,770,274 gallons of sewage had to be disposed of every twenty-four hours during the year in irrigating the fields. It is spread over properly-prepared and sown blocks of land by a series of mains and lateral carriers. The blocks are laid down with grass and lucerne, on which sheep and cattle are depastured. During the financial year 1912-13, 32,395 sheep were bought, the profit from that source being £10,893. Cattle to the number of 2846 were purchased, the profit for the year on cattle being £4539.

(c) *House Connections.* The work of house connections with the sewerage system is carried out under a carefully prepared by-law. Under the Amending Act of 1897, after a property has been declared to be a sewered property, the owner has several options. (a) He may submit a plan of his house connections for approval, and on approval being given, may agree to carry out the work within one month. (b) He may submit a plan, for which, if approved of, he may ask for an estimate of the cost of carrying out. This the

Board is bound to supply, and then the owner may either carry out the work himself or ask the Board to carry out the work, which it must do for the estimated price, whether the work costs less or more. (c) On default of the owner the Board may carry out the work, and at the request of the owner accept payment by forty quarterly instalments, bearing interest on such portion as from time to time remains unpaid at the rate of 5 per cent.

(a) *Number of Houses Connected, Capital Cost, Revenue and Expenditure.* The following table gives particulars as to the number of houses connected to the sewerage system, the total capital cost, and the receipts and disbursements during 1901 and 1908-13:—

MELBOURNE SEWERAGE WORKS.—TENEMENTS CONNECTED, CAPITAL COST, REVENUE, MAINTENANCE AND WORKING EXPENSES, 1901-2 and 1908-13.

Year.	Number of Houses Connected.	Capital Cost.	Revenue.			Maintenance, Repairs and Renewals.
			From Rates.	From other Sources.	Total.	
	No.	£	£	£	£	£
1901-2 ...	47,172	3,610,225	126,725	10,968	137,693	24,336
1908-9 ...	99,955	5,741,203	234,229	9,850	244,079	35,769
1909-10 ...	105,993	6,025,030	247,632	12,843	260,475	38,085
1910-11 ...	112,293	6,267,761	260,528	15,200	275,728	46,904
1911-12 ...	118,350	6,463,062	271,682	18,042	289,724	47,381
1912-13 ...	125,103	6,668,272	285,721	17,655	303,376	51,804

(iv.) *Water Supply in Country Towns and Districts.* By the Water Act 1905, which came into operation on the 1st May, 1906, the control and management of all Irrigation Trusts, with one exception, and of a number of waterworks and water supply districts were centralised, and their works and property vested in the State Rivers and Water Supply Commission. The powers and duties of this Commission were extended by the Water Act 1909, the whole of the Water Supply Department being now merged in the Commission. Further information with regard to this Commission and to the works and districts under its control are given in the section in this book dealing with Water Conservation and Irrigation. There are, however, in different parts of Victoria a number of other waterworks which are concerned chiefly with domestic supply, and which are controlled by local authorities, *i.e.*, by Waterworks Trusts or by municipal corporations. These works are constructed out of moneys either granted or lent by the State Government. The following table gives particulars as to the waterworks under the control of Trusts and municipal corporations for the years 1901 and 1909-13:—

VICTORIA.—COUNTRY WATERWORKS UNDER TRUSTS AND MUNICIPAL CORPORATIONS, 1901 and 1909-13.

Year.	Waterworks Trusts.						Municipal Corporations.*			
	Number of Trusts.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.	Receipts.	Expenditure.	Number of Corporations.	Capital Cost.	Capital Indebtedness.	Interest Outstanding.
	No.	£	£	£	£	£	No.	£	£	£
1901...	76	823,418	748,069	+	+	+	24	+	470,041	+
1909...	83	952,486	731,276	16,130	85,054	88,190	23	676,358	461,881	9,834
1910...	86	960,719	769,442	14,727	+	+	25	686,356	457,981	10,718
1911...	87	1,017,396	819,698	15,047	+	+	21	651,489	421,273	2,662
1912...	88	1,046,394	843,506	15,970	+	+	22	653,510	418,673	9,349
1913...	89	1,083,390	866,594	12,461	+	+	22	655,702	415,678	6,635

* Particulars as to the receipts and expenditure in respect of waterworks under the control of municipal corporations are not available. + Returns not available.

Under the provisions of the Local Government Act 1903, municipal councils are authorised to construct and maintain tanks, dams, and reservoirs, and must maintain existing works for the gratuitous supply of water. They are also empowered to accept the management and control of new waterworks within their respective localities, and may, with the consent of the Governor, construct or purchase new works within or without their locality. Councils are also authorised to enter into contracts for the supply of water for any period not exceeding ten years with the owner of any waterworks. Every municipality may levy a special water rate for water supplied, or for the purpose of constructing waterworks or paying the interest on any loan contracted by the council for such purpose, but the amount of the rate must not exceed in any year the sum of two shillings in the pound, provided that a minimum sum of ten shillings may be fixed by the council to be paid in respect of any property at which water is supplied.

(v.) *Geelong Waterworks Trust.* This trust was constituted under The Geelong Municipal Waterworks Act 1907, with borrowing power up to £300,000, afterwards increased by Act No. 2322, 1911, to £350,000. It was reconstituted under Geelong Waterworks and Sewerage Act 1910, with power to borrow an additional £250,000 for the purpose of installing a sewerage system for Geelong and suburbs. The available storage capacity of the reservoirs is 1468 million gallons, and the Trust is authorised to supply water to (a) City of Geelong; (b) the suburbs thereof, and all places within a radius of five miles of the Geelong Post Office; and (c) any place within ten miles on either side of the main pipe from Stoney Creek to Geelong. The sewerage scheme provides for a main outfall sewer 4 ft. 3 in. x 3 ft. 3 in. to the ocean at Black Rock—a distance of about nine miles. The scheme will embrace an area of 8081 acres, including the City of Geelong, Boroughs of Newton and Chilwell, and Geelong West, and the suburban areas situated in Corio and South Barwon Shires.

3. *Queensland.*—(i.) *The Metropolitan Water and Sewerage Board.* This Board was constituted by the Metropolitan Water and Sewerage Act 1909, which divested the then existing Water Board of its powers and duties and vested them in an extended form in the new Board. The Act further empowers the Board to carry out a sewerage and drainage system, and relieves the Local Authorities of their responsibilities in that matter. The district of the new Board comprises the cities of Brisbane and South Brisbane, the towns of Hamilton, Ithaca, Toowong, and Windsor, and the shires of Balmoral (except division 3), Coorparoo, Enoggera (except division 3), Sherwood (except division 1), Stephens, Taringa, Toombul, and a portion of Kedron.

The Board consists of nine members, viz., the president and eight elected colleagues.

(a) *Brisbane Water Supply.* The supply is derived from the upper reaches of the Brisbane River, and from two storage reservoirs, known respectively as the Enoggera and the Gold Creek reservoirs.

(1) *The Brisbane River Supply.* Of these the principal source of supply is the Brisbane River, about 75 per cent. of the water used being taken from it. The catchment area above the pumping station is about 4000 square miles. The Mount Crosby service reservoir, into which the water is pumped from the river, is built in cement concrete, and is 267 feet long, 100 feet wide, and 15 feet deep from high-water line, which is 455 feet above high-water mark at Brisbane. The capacity is about 2,500,000 gallons. The existing pumping plant is being considerably augmented, and new reservoirs and sedimentation basins are in course of construction.

(2) *The Enoggera Reservoir.* The Enoggera works are distant from Brisbane about eight miles by road. The catchment area is nearly thirteen square miles in extent, and the reservoir, which is formed by an earthen dam,

holds 1,000,000,000 gallons, of which 600,000,000 are available by gravitation. The greatest length of the reservoir is 2600 yards, and its greatest breadth 700 yards. The supply from Enoggera is filtered through an intermittent sand filtration plant, comprising half an acre of sand beds, and a pure water reservoir with a capacity of 750,000 gallons.

(3) *The Gold Creek Reservoir.* This reservoir is situated in the upper waters of Gold Creek, a branch of Moggil Creek, distant from Brisbane by road about thirteen miles. The supply is drawn from a catchment area adjoining that of Enoggera, and comprising an area of nearly four square miles. The total capacity is about 406,000,000 gallons, of which 400,000,000 gallons are available.

(4) *Service Reservoirs.* Certain portions of the metropolitan area are supplied with water from service reservoirs, which are connected with one or other of the main reservoirs alluded to above. These service reservoirs are constructed at Highgate Hill, Wickham Terrace, and Bartley's Hill, and have a total capacity of over 4,000,000 gallons. A fuller description of the Brisbane water supply scheme may be found in previous issues.

(b) *Brisbane Waterworks: Cost, Revenue, Expenditure, and Interest.* The subjoined table gives particulars as to the cost, the revenue and expenditure, and the amount of interest and loan redemption during 1901 and each of the years 1909 to 1913:—

BRISBANE WATERWORKS.—COST, REVENUE, EXPENDITURE, INTEREST, AND REDEMPTION OF LOANS, 1901 and 1909-13.

Year.	Capital Cost.	Revenue from Rates and Sales of Water.	Working Expenses.	New Work Construction.	Interest and Redemption of Loans.
	£	£	£	£	£
1901 ...	694,973	60,120	17,462	7,535	42,426
1909 ...	825,812	69,736	25,246	14,756	26,716
1910 ...	867,837	72,006	26,097	42,025	27,754
1911 ...	1,015,276	67,730	30,105	147,438	20,670
1912 ...	1,134,815	64,367	39,124	119,539	26,780
1913 ...	1,255,898	76,922	43,135	121,083	31,498

(c) *Brisbane Waterworks: Length of Mains, Tenements and Population Served, and Water Consumption.* The following table shews the length of mains, the number of tenements connected, the population supplied, the total quantity of water supplied, the average daily supply, and the average daily supply per head of population supplied during 1901 and each year from 1909 to 1913:—

BRISBANE WATERWORKS.—PARTICULARS, 1901 and 1909-13.

Year.	Length of Reticulation Mains.	Number of Tenements Connected.	Estimated Population Supplied.	Quantity Supplied.	Average Daily Supply.	Average Daily Supply per Head of Estimated Population.
	Miles.	No.	No.	,000 Gallons.	Gallons.	Gallons.
1901 ...	198	15,652	78,260	1,536,260	4,208,931	55
1909 ...	308½	21,560	107,800	1,673,287	4,584,351	42½
1910 ...	317	22,830	114,150	1,776,734	4,867,766	42½
1911 ...	333½	24,163	120,765	1,870,767	5,125,390	42.44
1912 ...	347	27,678	129,575	2,020,404	5,520,231	42.60
1913 ...	370½	28,301	139,925	2,099,590	5,752,302	41.05

The total length of the trunk mains is 69½ miles.

A scheme of sewerage has been devised for Brisbane and its suburbs. It is intended to construct works for the provision of a population of 275,000, and tenders have been invited for the construction of the first three sections of the main sewer.

(ii.) *Country Towns Water Supply.*—In addition to the city of Brisbane there were at the end of the year 1912 twenty-eight towns in Queensland provided with water supply systems, constructed by municipalities chiefly from Government loans. The sub-joined statement gives particulars of all the water supply systems—exclusive of Brisbane—for the year 1912 :—

QUEENSLAND.—PARTICULARS OF COUNTRY WATER SUPPLY SYSTEMS, 1912.

Receipts	Cost of construction to 31/12/11 ...	£	738,186	Expenditure	Office and salaries ...	£	10,323
	Rates and sales of water		83,334		Construction ...		9,971
	Other ...		7,597*		Maintenance ...		26,527
					Interest & redemption		30,378
					Other expenses ...		9,731
	Total Receipts ...		90,931		Total ...		86,930
Assets	...	...	607,697	Liabilities	...	...	443,825

* Including £42,534 from Government loans.

4. *South Australia.*—(i.) *Adelaide Water Supply System.* The water supply system of Adelaide is under the control of the Public Works Department. The supply is obtained partly from the catchment areas of the rivers Onkaparinga, Torrens, and Sixth Creek, and partly from springs and pumping stations. There are three storage reservoirs, situated at Happy Valley, Hope Valley, and Thorndon Park, having an aggregate capacity of 3,895,000,000 gallons, while the tanks used in connection with the springs and pumping stations have a further capacity of 4,824,000 gallons. The total capital cost up to the 30th June, 1913, was £1,883,450, the total revenue being £2,712,750 and the area served approximately 106,000 acres.

The following table gives various particulars relating to the water supply of Adelaide for the years 1908 to 1913 inclusive :—

ADELAIDE WATER SUPPLY.—LENGTH OF MAINS, REVENUE, EXPENDITURE, AND CONSUMPTION OF WATER, 1908 to 1913.

Year Ended 30th June.	Length of Mains.	Gross Revenue.	Working Expenses.	Net Revenue.	Percentage of Net Revenue on Capital Cost.	Total Consumption of Water.*
	Miles.	£	£	£	%	Million of Gals.
1908 ...	673	76,707	21,233	55,474	3.26	4,000
1909 ...	684	81,412	20,762	60,650	3.53	4,000
1910 ...	704	82,290	22,709	59,581	3.31	4,000
1911 ...	732	89,902	28,032	61,870	3.40	4,000
1912 ...	763½	94,280	26,384	67,896	3.68	4,600
1913 ...	802½	105,590	27,982	77,608	4.12	4,700

* In the Adelaide Water District there are no governing meters. The quantities shewn above are as recorded by gaugings taken at the reservoirs, and include evaporation and absorption.

(ii.) *Adelaide Sewerage System.* In connection with the sewerage system of Adelaide, which is also under the control of the Public Works Department, about 322 miles of sewers had been laid in the city and suburbs up to the 30th June, 1913. The sewage is disposed of on a farm and filter-beds, the latter being used only during the winter months. A scheme of sewerage extension is now nearing completion, which includes a pumping station, to deliver the sewage to the existing sewage farm.

The following table gives particulars relating to the Adelaide sewerage system for the years 1908 to 1913 inclusive:—

ADELAIDE SEWERAGE SYSTEM.—REVENUE AND EXPENDITURE, 1908 to 1913.

Year Ended the 30th June.	Revenue.			Expenditure.			Net Revenue.	
	Rates and Interest.	Sewage Farm. Sales of Produce, etc.	Total.	Maintenance.	Sewage Farm Working Expenses.	Total.	Total.	Percentage on Capital Cost.
	£	£	£	£	£	£	£	%
1908 ...	32,678	7,436	40,114	6,294	5,081	11,375	28,739	4.49
1909 ...	34,701	8,284	42,985	7,161	5,917	13,078	29,907	4.56
1910 ...	36,322	7,213	43,535	7,184	6,088	13,272	30,263	4.41
1911 ...	37,938	7,189	45,127	8,462	7,681	16,143	28,984	4.26
1912 ...	41,449	6,984	48,383	9,376	5,039	14,415	33,968	4.88
1913 ...	45,373	8,392	53,765	9,803	6,392	16,195	37,570	5.01

The seaside town of Glenelg is served by a separate sewerage disposal works, including a pumping station, septic tank, lucerne plots, and filter beds. The net revenue for the year ended 30th June, 1913, was £1475, being 3.61 per cent. on the capital cost. Up to the same date 13½ miles of sewers had been laid.

(iii.) *Water Supply in Country Towns.* In South Australia there is a number of country waterworks under the control of the Public Works Department. There are three large reservoirs at Barossa, Beetaloo, and Bundaleer, which supply fifty-three townships with water for domestic and stock purposes. The principal towns thus supplied are Gawler, Wallaroo, Moonta, Kadina, Port Pirie, Port Wakefield, and Balaklava. The following table shows the capacity of these reservoirs, together with particulars as to the townships supplied and the country lands reticulated:—

PRINCIPAL COUNTRY WATERWORKS, SOUTH AUSTRALIA, 1913.

Reservoirs.	Townships Supplied.			Country Lands Reticulated.		Capacity in Million Gallons.	
	Number.	Square Miles.	Miles of Main.	Square Miles.	Miles of Main.	Head-works.	Service Reservoirs.
Barossa ...	23	40	64	1,001	505	993½	10
Beetaloo ...	19	43	138	1,648	790	800	68
Bundaleer ...	13	8	31	1,040	453	1,319	16

Fifteen township districts are supplied from smaller local reservoirs, the most important town served being Port Augusta. New water supply schemes are in course of construction for the supply of townships and farming lands on Eyre Peninsula, near Cowell, Arno Bay, and Cleve.

5. *Western Australia.*—(i.) *Water Supply, Sewerage and Drainage Department.*—Prior to 1912, water supply, sewerage and drainage, in Western Australia, although under Governmental control, were nevertheless under the management of several distinct departments. In that year, however, the Government decided that this divided control should

be concentrated in one department with the Minister of Works as administrator, and on the 1st August, 1912, a new department with the above title assumed the management of the undermentioned water supplies:—(a) The Metropolitan Water Supply Sewerage and Drainage Department. (b) The Goldfields Water Supply Administration. (c) The branch of the Mines Department dealing with the Mines Water Supply, boring and well-sinking in mining districts, the North-west, etc. (d) The branch of the Public Works Department dealing with water supply, sewerage, drainage, well-sinking, boring, etc., in agricultural districts, the North-west, etc.

The Acts of Parliament administered by the new department are:—"The Metropolitan Water Supply, Sewerage and Drainage Act 1909;" "The Goldfields Water Supply Act 1902" and amendment; "The Water Boards Act 1904;" "The Lands Drainage Act 1900" and amendment, and "The Water Supply Act 1893." The number of water areas, apart from the metropolitan and Mundaring undertakings, existing when the Department took over this branch of work was 12, of which 11 were controlled by Boards and one by the Minister. Since that date four new areas have been declared, while two Boards have been dissolved. Of the 16 water areas, nine are now controlled by local Boards and seven by the Department.

(ii.) *The Perth Metropolitan Water Supply, Sewerage, and Drainage.* The Perth Metropolitan Water Supply Works were first opened by a private company in October, 1890. Under the provisions of the Metropolitan Waterworks Act 1896, however, the works were purchased by the Government at a cost of £220,000, and were placed under the control of a Board, the functions of which have been exercised since the year 1904 by the Minister for Works. By the Metropolitan Water Supply, Sewerage, and Drainage Act 1909, all water and sewerage works formerly vested in the Metropolitan Board were transferred to a Minister of Water Supply, Sewerage, and Drainage. In August 1912 the administration was transferred to the new Water Supply Department (see preceding paragraph).

(a) *Water Supply.* The supply of water is derived from four sources—(i.) the Victoria reservoir, (ii.) Bickley Brook reservoir, (iii.) the Mundaring reservoir, and (iv.) from six artesian bores.

(a) *The Victoria Reservoir.* This is the main source of supply. The reservoir has a capacity of 220,000,000 gallons, and has a catchment area of 10,000 acres on the Darling Ranges. During the year 1912-13, 327 million gallons were obtained from this reservoir.

(b) *Bickley Brook Reservoir.* This is supplementary to the Victoria reservoir, being connected to it by an eight-inch pipe. It has a catchment of 1780 acres, and a supply of 136 million gallons was drawn from this source during the year ending 30th June, 1913.

(c) *The Mundaring Reservoir.* This reservoir is used as an emergency supply. It has a capacity of 4,650,000,000 gallons, but is only connected by an eight-inch main. This reservoir has a catchment area of 569 square miles, and was constructed in connection with the goldfields water supply. Nearly 6 million gallons were drawn from this source during the year for metropolitan use, the goldfields consumption for the same period being 1,205 million gallons.

(d) *Artesian Bores.* There are in all six artesian bores, the flow from which augments the main supply from the Victoria reservoir. The total bore water pumped during 1912-13 was 484,796,000 gallons.

(b) *Financial Operations of Water Supply Department.* The following table gives particulars of the financial operations of the Metropolitan Water Supply Branch for each year ending the 30th June from 1909 to 1913 inclusive:—

PERTH METROPOLITAN WATER SUPPLY BRANCH.—PARTICULARS OF FINANCIAL OPERATIONS, 1909 to 1913.

Year ended the 30th June.	Capital Cost of Works.	Depreciation.	Net Capital Cost.	Gross Revenue.	Cost of Maintenance and Management.	Interest Earned on Gross Capital Cost.	Ratio of Working Expenses to Revenue.
	£	£	£	£	£	Per cent.	Per cent.
1909 ...	524,022	34,468	489,554	45,711	14,162	6.02	30.98
1910* ...	628,757	44,415	584,342	60,249	20,862	6.26	34.62
1911* ...	645,023	92,351†	552,672	61,723	22,081	6.15	35.77
1912* ...	701,852	107,388	594,464	66,892	25,082	5.95	37.49
1913* ...	768,068	135,912	632,156	74,600	25,479	6.39	34.14

* Perth, Fremantle, and Claremont combined. † £39,724 transferred from reserve account to depreciation to provide for estimated overvaluation made at time of purchase of Perth Water Supply.

(c) *Consumption of Water.* The following table shows the total annual supply, the average daily supply, and the average daily supply per house and per head of population during each financial year from 1909 to 1913 inclusive:—

PERTH METROPOLITAN WATER SUPPLY BRANCH.—CONSUMPTION OF WATER, 1909 to 1913.

Year ended the 30th June.	Total Annual Supply in '000 Gallons.			Average Daily Supply in Gals.	Number of Houses Supplied.	Estimated Population Supplied.	Average Daily Supply in Gals.	
	From Reservoir.	From Bores.	Total.				Per House.	Per Head of Population.

PERTH DISTRICT.

1909 ...	349,467	281,585	631,052	1,731,000	14,012	54,000	123	32.0
1910 ...	392,715	281,104	673,819	1,846,000	14,512	56,000	127	33.0
1911 ...	414,512	355,810	770,322	2,110,000	15,075	59,000	131	35.7
1912 ...	364,428	420,914	785,342	2,441,000	16,055	62,250	152	39.4
1913 ...	424,682	484,796	909,478	2,491,700	17,000	68,000	146	36.6

FREMANTLE DISTRICT.

1909 ...	...	282,785	282,785	774,753	3,971	19,000	195	40.7
1910 ...	...	278,179	278,179	762,133	4,042	19,500	188	39.0
1911 ...	...	286,461	286,461	782,085	4,150	20,000	188	39.1
1912 ...	...	313,405	313,405	856,300	4,280	20,500	200	41.7
1913 ...	44,529	295,993	340,522	932,937	4,500	22,000	207	42.4

CLAREMONT DISTRICT.

1909 ...	...	105,584	105,584	289,271	1,670	7,000	173	41.3
1910 ...	...	101,240	101,240	277,370	1,783	7,500	156	37.0
1911 ...	...	110,275	110,275	302,123	2,042	8,000	148	37.7
1912 ...	...	118,399	118,399	328,800	2,320	8,750	141	37.6
1913 ...	...	125,171	125,171	342,931	2,650	10,000	139	34.3

(d) *Sewerage and Drainage in Perth and Fremantle.* The work of providing a sewerage system for Perth and Fremantle was commenced in 1906, and has proceeded without interruption up to the present time. House connections in Perth are making rapid progress, there being upwards of 2800 premises connected to the sewers, while in Fremantle 309 houses had been connected up to 30th June, 1913. The net financial

result of operations of the Metropolitan Water Supply, Sewerage and Drainage Department for 1912-13 is a deficit of £4438, as against a surplus of £17,964 for the preceding year, the difference being accounted for by the fact that in 1912-13, capital charges on the sewerage account were for the first time charges against revenue. A description of the method of sewage disposal adopted may be found in previous issues. (See Year Book No. 5, p. 1031.)

(iii.) *The Goldfields Water Supply Branch*.—This scheme by which the Government of Western Australia undertook to provide a permanent supply of water for the population of the eastern goldfields of that State has already been described in previous issues of the Year Book (see No. 5, page 582). The main source of supply is the Helena River in the Darling Ranges, whence by a system of reservoirs, the water is conveyed to Kalgoorlie and the surrounding district. Up to the 30th June, 1912, the total cost of construction was £3,373,168. The total consumption for the financial year 1912-13 was 1,204,757,000 gallons, an increase on the previous year of 69,957,000 gallons. The gross revenue for the year was £254,920, and the working expenses £89,388, leaving a surplus available towards interest and sinking fund of £165,532. The outlay for interest and sinking fund charges in respect of supplementary capital borrowed on debentures absorbed £28,671, leaving £136,861 payable to the State Treasury. During the financial year the State Treasury paid £168,813 interest and sinking fund on State loans in respect of these works, leaving a net deficiency of £31,952.

(iv.) *Mines Water Supply Branch*.—On the 1st of August, 1912, the administration of this branch was transferred to the new Water Supply, Sewerage and Drainage Department. While the statistics of this branch of the Department do not properly belong to the section dealing with "Local Government," nevertheless, as the functions exercised by the Department are similar to those delegated to local authorities in most of the other States of the Commonwealth, it is considered advisable to include them in the section under review.

At the present time the water stations under the control of the engineer number about 1400, and are spread over an area of nearly 500,000 square miles, extending from the Phillips River in the south to the Kimberley district in the far north. The principal works carried out by the branch are as follows:—(a) Domestic supplies for mining towns and the supply of water for battery and general mining purposes. (b) Opening up the very remote portions of the State by means of tracks, of which there are nearly 4000 miles. (c) The sinking of wells and bore-wells, also testing the country by means of boring to locate water, and thus enabling the mineral resources of the State to be systematically prospected. (d) Diamond drilling has also been carried out for the purpose of testing the country for minerals at depths unattainable with the ordinary boring plants. (e) Nearly 2000 miles of stock routes have been opened up, and wells have been sunk at easy stages, capable of watering mobs of 400 head of cattle. In addition to these works the Wiluna-East Kimberley route (890 miles) has been constructed. Tanks, dams, and reservoirs have been made on the goldfields for the conservation of surface water, their total storage capacity being 200,000,000 gallons, and their cost over £400,000.

Boring to locate water for domestic, stock, battery and other purposes has been carried out, the total depth being nearly 120,000 feet, and where good water has been found, a bore has been equipped with casing and pump, or a well sunk, according to requirements. The water shafts, of which there are about 300, are equipped according to the supply and demand, in some cases with only windlass and bucket, in others with a pump, storage tank, etc., while some which supply towns and batteries are equipped with powerful pumps and engines.

A very important adjunct of the Branch is the camel farm established at Coolgardie, where the breeding of camels is undertaken, the number at present being about 350. These camels are used by parties from the Water Supply Branch in the arid regions of

the interior, where water is scarce and the stages are long, and occasionally they are used by the other Government Departments engaged on such works as the Rabbit Proof Fence and Transcontinental Railway Survey.

(v.) *Water Supplies in Agricultural Areas.*—When, in 1910, the Government decided to open up the unexplored agricultural districts, it was recognised that, to ensure the success of the undertaking, water supplies and access thereto were necessary. At first it was decided to rely wholly on conservation by dams. The system of zonation was inaugurated, that is, dams were constructed at a distance of about eight miles apart. At the end of 1911, however, it was decided to further exploit the country by boring for well water in conjunction with further dam construction, and up to the close of 1913, 256 tanks have been constructed and 225 wells have been sunk. The former have a total holding capacity of 86,000,000 gallons, and the water conserved approximates 40,000,000 gallons. The capital expenditure on this branch of water supply for the year ending 30th June, 1913, was £74,300.

6. *Tasmania.*—(i.) *Hobart Water Supply.*—The original water supply of Hobart was obtained from a stream known as the Hobart Rivulet, flowing from Mount Wellington, the works being carried out in 1831 by the Imperial Government. These works consisted of an aqueduct and a line of cast-iron pipes, the water being distributed to several points known as “wells.” By an Act of the State Parliament passed in 1860 the works were transferred to the municipality. Under this Act certain additional streams flowing from Mount Wellington were acquired as sources of supply, and a storage reservoir containing 45,000,000 gallons was constructed. The catchment area on Mount Wellington at present comprises an area of 4200 acres, the sources of supply having been extended at various times as far as the North West Bay River, fifteen miles from Hobart.

(a) *Storage Reservoirs.* There are two storage reservoirs about $2\frac{1}{2}$ miles from the city. One contains 68,000,000 gallons and is 502 feet above sea-level, while the other contains 45,000,000 gallons and is 447 feet above sea-level. The whole of the supply is by gravitation. The water is brought from the various streams by means of stone aqueducts and cast-iron pipes to the reservoirs, and thence by four 10-inch cast-iron mains, of which three lead to the distributing reservoirs and one direct to the shipping and southern portion of the city.

(b) *Capital Cost, Tenements Connected, Length of Mains, Revenue and Expenditure.* The total capital cost to the end of 1913 was £235,450, but a considerable amount of reticulation work has been done out of revenue and not charged to capital account. The outstanding loans at the end of 1913 amounted to £188,175. At the same date the number of tenements supplied in the city and suburbs was 8200, the population 39,107, and the length of reticulation mains $86\frac{3}{4}$ miles. The revenue and expenditure for the last six years were as follows:—

HOBART WATERWORKS.—REVENUE AND EXPENDITURE, 1908 to 1913.

Particulars.	1908.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£
Revenue	19,719	20,091	20,643	31,207	23,858	21,982
Expenditure	22,901	23,729	22,238	20,381	20,584	21,336

(c) *Proposed Extensions.* Parliamentary sanction to borrow £93,000 has been obtained for the purpose of improving the water supply of the city and suburbs of Hobart; £75,000 of this amount is to be spent on a new storage reservoir, and a contract for the construction of the dam for £56,500 has been let, the balance being retained for expenditure on other works connected with the scheme.

(ii.) *Hobart Sewerage System*.—A scheme for the construction of a sewerage system in Hobart was adopted in 1903. The sewage is discharged into the estuary of the River Derwent. Up to the end of the year 1913 about 70½ miles of sewers had been laid at a cost of about £188,235, and 6751 tenements (out of a total of 6845) had been connected. The revenue for the year was £12,662. The scheme, which is intended to sewer over 2000 acres so as to serve an estimated population of about 30,000 people, is almost completed. The suburb of Queenborough has recently become incorporated with the city, and arrangements are now being made to extend the system to this district.

§ 4. Harbour Trusts.

1. *Introduction*.—In the chief ports and harbours of the Commonwealth, administrative bodies have been created, in whom is vested the control and management of the port with respect to dredging, wharf and harbour accommodation, pilotage, harbour dues, etc.

Of these Trusts or Boards some are purely departmental, some are nominated by Government, while others are comprised of members appointed by the municipal and other associations connected with the port. In the latter case, the Government is usually represented on the Board by one or more nominated members. The Boards and Trusts mentioned hereunder are the only ones for which information is at present available.

2. *Sydney Harbour Trust*.—The establishment of this Trust was the direct outcome of the outbreak of bubonic plague in the port of Sydney in the early part of the year 1900. It was proved that this disease was due to the introduction of plague-stricken rats in vessels arriving from ports in which the disease had made its appearance. As a consequence the whole of the foreshores of the harbour, together with certain adjoining wharves, stores, dwelling houses, and other properties, were vested in a body of trustees. The Trust was established by an Act which came into force on the 11th February, 1901. The powers and duties of the Trust have been dealt with in previous issues of this book, together with some of the more important improvements carried out by the Commissioners. (See Year Book No. 5, p. 990.)

(i.) *Revenue, Expenditure, and Capital Cost*. The subjoined table gives particulars of the revenue and expenditure of the Trust, and also shews the total capital debt for properties, etc., vested in the Commissioners, the amount of interest payable on the debt, and the balance of revenue after deducting expenditure, interest, and the amount of the Commissioners' salaries:—

SYDNEY HARBOUR TRUST.—REVENUE, EXPENDITURE, CAPITAL DEBT, INTEREST AND BALANCE, 1901 and 1909-13.

Year ended the 30th June—	Revenue.				Expendi- ture.	Total Capital Debt.	Interest.†	Balance.
	Wharfage & Harbour Rates.	Tonnage Rates & Berthing Charges	From Other Sources.	Total.				
	£	£	£	£	£	£	£	£
1901* ...	42,784	3,208	12,324	58,316	11,275	4,692,782	55,554	— 8,513
1909 ...	183,753	11,539	139,076	334,368	103,882	5,338,108	191,532	38,954
1910 ...	183,094	11,563	142,390	337,047	142,763+	5,482,060	191,246	3,038
1911 ...	212,061	15,536	146,158	373,755	143,181+	5,697,756	200,845	29,729
1912 ...	234,731	18,163	158,755	411,649	143,170+	6,136,671	212,842	\$56,398
1913 ...	258,703	18,417	173,162	450,282	154,540†	6,535,853	221,049	74,693

* For the period from 11th February to the 30th June, 1901. † The rate of interest charged each year is the average rate on the total capital debt of the State, which varies. ‡ Including expenditure for the renewal, replacement or reconstruction of wharves or buildings. § Including £761 repaid to previous revenue votes.

— Represents a loss.

The revenue for the year 1912-13 shews an increase of £38,635 on that for the previous year, and is the highest attained since the formation of the Trust. The working expenses for the year shewed an increase of £10,206 on the previous year, while the expenditure on renewals, etc., increased by £1164, making a total increased expenditure of £11,370.

(ii.) *Dredging and Towing.* The subjoined statement gives particulars of the dredging and towing done by the dredges and tug-boats owned by the Trust:—

**SYDNEY HARBOUR TRUST.—PARTICULARS OF DREDGING AND TOWING,
1901 and 1909-13.**

Year.	Dredging.			Towing Dredged Material.		
	Tons Dredged.	Total Expenditure.	Expenditure per Ton.	Miles run Towing.	Total Expenditure in Towing.	Expenditure per Mile Towing.
	Tons.	£	Pence.	Miles.	£	Pence.
1901 ...	317,500	3,696	2.79	29,277	2,849	23.35
1909 ...	434,504	13,066	7.22	38,699	6,634	41.14
1910 ...	448,650	11,495	6.15	33,048	5,519	40.08
1911 ...	1,675,945	19,058	2.72	38,372	5,442	34.04
1912 ...	1,671,540	24,036	3.45	30,163	6,636	52.80
1913 ...	1,875,925	28,104	3.95	28,317	5,976	48.22

3. *The Melbourne Harbour Trust.*—This Trust was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of thirty-four years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels of a draught greater than twelve feet had to discharge in the bay into lighters.

(i.) *Constitution of the Trust.* The Harbour Trust Act was originally drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board, and the Clyde Trust. Under the Act of 1876, as amended in 1883, the number of Commissioners was fixed at seventeen.

(ii.) *Works Undertaken by Trust in the River and in the Port.* In 1890 a Consolidating Act was passed, and the borrowing powers of the Trust were increased to £2,000,000, and subsequently by the Act of 1913 to £3,000,000. The river was widened from Queen's Bridge to the bay to about 300 feet, while the depth has been gradually increased until at the present time it is twenty-six feet at low water. Five and three-quarter miles of wharves carrying sheds which measure a total length of 14,515 feet, and cover an area of 705,780 square feet, have been constructed along the river and at the Victoria Dock, Melbourne.

(a) *The Coode Canal.* In 1886 the canal across the flats below Fishermen's Bend was completed at a cost of £96,000. The length of the canal is 2002 yards, the distance from Queen's Bridge to the river entrance being thereby reduced from seven miles to five and three-quarter miles, and the navigation being greatly facilitated. This channel, which is called the Coode Canal, has been widened 164 feet, which will make its total width 487 feet, and its width at low water 430 feet. At the present time there is a depth of 26 feet at low water for a width of 250 feet.

(b) *The Victoria Dock.* This dock, four miles up the river and opened in 1892, has an area of ninety-one acres and a depth of twenty-six feet at low water. The entrance to the dock is 160 feet wide. There are 8750 feet of wharfage, and the total cost, including wharves, sheds, and approaches thereto, was, to 31st December, 1913, £522,100. The sheds have a total length of 4868 feet, and cover an area of 265,600 square feet.

(iii.) *Works in the Bay.* Prior to 1889 all the mail steamers and vessels of heavy draught had to lie at anchor in the bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels. This work was completed at a cost of £256,160. In 1893 a channel over 8000 feet long and 600 feet wide was constructed, running in a southerly direction from Port Melbourne Railway Pier and having a navigable depth of thirty feet o.l.w. The cost of this work was £218,379.

(iv.) *Dredging.* The total quantity of material raised by the dredging and excavation done in the improvement of the river and bay amounts to nearly 46 million cubic yards.

During the ten years ending 31st December, 1913, the average cost of dredging per cubic yard was 2.86 pence and the cost of towing and depositing 6.29 pence, not allowing for depreciation of plant. The Trust has expended £225,458 in reclaiming land within its jurisdiction. The amount of material raised annually is now about 2,500,000 cubic yards.

(v.) *Financial Operations.* The revenue of the Trust is obtained from wharfages, and quayage rates, rents and license fees from lands and ferries, and other license fees. One-fifth* of the revenue of the Trust is paid to the consolidated revenue of Victoria. The following table gives particulars of the revenue and expenditure of the Trust from 1908 to 1913 inclusive:—

MELBOURNE HARBOUR TRUST.—REVENUE AND EXPENDITURE, 1908 to 1913.

Particulars.	1908.	1909.	1910.	1911.	1912.	1913.
REVENUE.						
	£	£	£	£	£	£
Rates and rents	272,409	259,641	316,787	332,732	337,626	337,562
Interest	3,662	90	410	2,039	2,375	665
Recoups	1,068	3,082	2,138	4,654	7,297	544
Total	277,139	262,813	319,335	339,425	347,298	338,771
EXPENDITURE.						
	£	£	£	£	£	£
Wharfage refunds	1,161	997	1,618	1,097	1,457	1,112
Consolidated revenue of Victoria	53,869	51,612	62,604	65,413	68,344	60,960
Maintenance and management	70,224	54,962	56,794	58,987	86,486	94,621
Interest on loans	81,413	72,517	69,409	69,366	69,264	71,081
Dredging (construction) ...	9,162	16,368	25,200	31,932	26,244	37,602
Wharf " "	4,942	5,146	6,308	22,656	108,346	176,286
Other Harbour improvements ...	4,522	7,724	9,880	787	3,777	7,760
Plant account	13,753	11,887	860	21,935	72,078	52,741
Redemption of loans expenses ...	603	1,794	...	...	...	...
Total	239,649	223,007	232,673	272,173	435,996	502,163
SURPLUS.						
					†	†
Surplus	37,490	39,806	86,662	67,252	88,698	163,392

* Limited by Act 2449 to £60,000 per annum for five years from 1st January, 1913.

† Signifies a deficit.

4. **Fremantle Harbour Trust.**—Under the provisions of an Act passed in 1902, a Harbour Trust was constituted for the general administration of Fremantle harbour, and since January, 1903, the Trust has had full control of all the affairs of the harbour, and undertakes the duties of wharfingers, and the receiving, sorting, storing, delivering, and handling of all cargo, between vessels and the owners of the goods. The works, which were commenced in 1892, were designed with the object of forming a safe and commodious harbour within the mouth of the Swan River, so as to admit vessels at all states of the tide, and thus enable cargo to be loaded and discharged at the quays and goods-sheds on the river banks. Two ocean moles have been thrown out from the north and south heads, the former being 3450 feet and the latter 2040 feet long. A channel, 450 feet wide and 30 feet deep at low water, has been blasted and dredged through the rock which formerly crossed the estuary to the river, and wharves and goods-sheds have been constructed along the reclaimed foreshore on both sides of the harbour. The port possesses up-to-date-electrically operated grain storage and shipping appliances and the quays are well equipped with electric cranes and elevators, all wharves and stores being in direct communication with the State railway system. At the present time all the European mail boats, which make Fremantle the first and last port of call in Australia, are able to enter and leave the harbour in all weather and at all tides. For the year ended 30th June, 1913, the total revenue of the Trust was £99,768, and the expenditure £76,198. The gross amount paid to the Treasury for the year was £123,570, being interest £54,613, sinking fund £15,604, and surplus revenue account £39,000.

5. **Hobart Marine Board.**—The Hobart Marine Board was established in 1858, and consists of nine wardens, elected by the shipowners, importers and exporters of the port. To meet the requirements of the large steamers now visiting the Commonwealth, extensive harbour improvements were commenced in 1912. The ocean wharf and pier has now a length of 1150 feet, with a depth of water from 36 feet at the inner to 60 feet at the outer end.

The total capital debt on properties in connection with the Harbour Trust vested in the Board is £96,000. The interest paid thereon in 1913 amounted to £3865. The Marine Board also guarantees the interest on the cost of Tasman Island Lighthouse, £22,202. The revenue and expenditure of the Board for the years 1912 and 1913 were as follows :—

HOBART MARINE BOARD.—REVENUE AND EXPENDITURE.

Year.	REVENUE.				EXPENDITURE.			
	General.	Harbour Improvements.	Light-house Fund.	Total.	General.	Harbour Improvements.	Light-house Fund.	Total.
	£	£	£	£	£	£	£	£
1912 ..	19,281	35,000	10,804	65,085	20,293	32,490	11,590	64,373
1913 ..	21,343	*38,000	10,634	69,977	*20,453	35,917	11,948	68,318

* Including £8000 transferred from the General account to the Harbour Improvements account.

6. **Launceston Marine Board.**—The Board was formed in 1858 and consists of nine members, elected on the State Parliamentary franchise, with special residential conditions. The principal work of the Board is in connection with the straightening, deepening, and widening of the River Tamar, the distance from the wharves to the open sea being 40 miles.

Wharves to the length of 3758 feet have been constructed, the depth at some of them being 40 feet S.L.W. The total capital debt on 31st December, 1913, was £75,758, of which £27,250 was incurred on the Tamar Improvements Scheme. The revenue for 1913 was £19,469 and the expenditure £17,249.

7. **Geelong Harbour Trust.**—This Trust was appointed in 1905, and consists of three Commissioners appointed by the Government of Victoria. To the 31st December, 1912, the Trust had borrowed £240,000. The sinking fund at the same date stood at £6794. The revenue for the year 1912 was £34,695 and the expenditure £36,263. Under the Act appointing the Trust, one-fifth of a certain portion of the revenue is paid into the Consolidated Revenue of Victoria. In 1912, this amounted to £2985, making a total of £17,267 paid to the State since the inception of the Trust. At Sparrovale the Trust has established an experimental and model farm, confined almost entirely to dairy farming and the growing of lucerne. The revenue from this source for the year 1912 was £5191.

8. **Bundaberg Harbour Board.**—The principal port in Queensland for the shipment of sugar is Bundaberg, more than 55,000 tons of that commodity having been shipped from the port during 1913. The Harbour Board consists of nine members, representing the district shire councils and the shipowners and exporters, with one Government nominee.

The revenue for the year amounted to £8963 and the expenditure to £8067. The total Port Improvements Loans and Government Endowment amounted on the 31st December, 1913, to £31,147. During the year 1913, 256,850 tons were dredged at a cost of £3047.

9. **Bunbury (Western Australia) Harbour Board.**—The Bunbury Harbour Board was constituted in 1909, and consists of five members appointed by the Government.

The capital expenditure for the year ending 30th June, 1913, was £5776, making the total capital expenditure to that date £227,132. The revenue for the year was £27,231 and the expenditure £7941, the balance being paid into Consolidated Revenue. The timber trade is the principal industry of the port, the shipments of timber for the year ending 30th June, 1913, amounting to 217,068 loads.

10. **Burnie and Table Cape (Tasmania) Marine Board.**—While the existing works accommodate steamers of 4000 to 5000 tons, which visit the port regularly, they are insufficient for the rapidly increasing traffic in produce and ores from the north-west and west coast districts of Tasmania. A scheme is, therefore, being carried out by which the port will eventually be capable of taking any shipping trade in the Commonwealth. A breakwater is being constructed 1200 feet in length and with a depth of 40 feet at low water. It is intended later on to increase the length to 4000 feet and to enclose 300 acres of deep water space, of which 100 acres will have a depth of nearly 45 feet. The expenditure on that portion of the scheme at present under construction will be £150,000.

§ 5. Fire Brigades.*

1. **New South Wales.**—Reference has been made in the section of this book dealing with the subject of *Private Finance* (see page 758) to the constitution of the Board of Fire Commissioners of New South Wales, which has now superseded the Metropolitan and all other Fire Brigade Boards in that State.

(i.) *Receipts and Disbursements of Board of Fire Commissioners of New South Wales.* The subjoined table shews the actual receipts and disbursements of the Board, for the years 1911, 1912 and 1913 :—

* See § 7, Fire Insurance, p 758.

NEW SOUTH WALES BOARD OF FIRE COMMISSIONERS.—RECEIPTS AND DISBURSEMENTS FOR SYDNEY FIRE DISTRICT, 1911, 1912 and 1913.

Year.	Receipts.						Disbursements.
	From Government.	From Municipalities.	From Fire Insurance Companies.	From Firms.	From other Sources.	Total.	
	£	£	£	£	£	£	£
1911 ...	21,643	21,643	21,198	444	1,145	66,073	60,667
1912 ...	20,100	20,100	19,896	204	1,874	62,174	65,713
1913 ...	25,586	25,586	25,404	182	2,270	79,028	76,853

With reference to the preceding table, under the "Fire Brigades Act 1909," by which the New South Wales Board of Fire Commissioners was constituted and which came into operation on 1st January, 1910, insurance companies do not now, as formerly, return the amount of their risks, but give in lieu thereof the amount of premiums received, which forms the basis of their contribution towards the revenue of the Board. By this Act also, firms which effect insurances with companies not registered in New South Wales are likewise required to make contributions on account of the premiums paid to such companies, which is the first instance of this class of insurer being compelled to share the expense of local advantages, which had hitherto been available free of cost. A fuller description of the principal provisions of this Act will be found in previous issues of this book (see Year Book No. 5, page 990). The Sydney fire district includes the City of Sydney and suburbs, comprising a total area of 168 square miles.

2. Victoria.—Under the Fire Brigades Act of 1890 a metropolitan fire district and nine country fire districts were established, the former being placed under the control of a Metropolitan Fire Brigades Board, and the latter under the control of a Country Fire Brigades Board.

(i.) *Metropolitan Fire Brigades Board.* The metropolitan fire district originally comprised the area included in the several municipalities within a radius of ten miles from the Melbourne General Post Office, but this area has since being extended in certain directions so as to include the greater part of the Shire of Moorabbin and also the township of Mordialloc. The Board is composed of nine members, of whom three are appointed by the Governor-in-Council, three by the municipal councils, and three by the insurance companies. On the 31st December, 1913, the Board had under its control 49 stations, 231 permanent men, 150 auxiliary firemen, 28 special service firemen, 10 steam fire engines, 5 gasolene engines, 2 chemical engines (1 motor), 2 petrol motor fire engines, 104,127 feet of hose, and 251 fire-alarm circuits having 827 street fire-alarms, of which 755 contained telephones. The total length of wire in use outside stations for fire alarms and telephones is about 556 miles.

(ii.) *The Country Fire Brigades Board.* This Board consists of nine members, of whom three are appointed by the Governor-in-Council, two are elected by the municipal councils of the districts where there are brigades registered under the Board, two by the fire insurance companies, and two by the registered fire brigades. At the end of the year 1913 there were 103 municipal councils, and sixty-five insurance companies included in the operations of the Act. All the brigades are volunteer brigades, but in the large towns permanent station-keepers and watchmen are employed. There were 121 registered brigades and 2396 registered firemen at the end of the year 1913.

(iii.) *Financial Operations of both Boards.* The Government, the insurance companies and the municipalities in which the Boards operate contribute equally to the cost and maintenance of the brigades. The following table gives particulars as to the financial operations of the Melbourne Board during each year from 1909 to 1913 inclusive:—

VICTORIA.—REVENUE AND EXPENDITURE OF METROPOLITAN FIRE BRIGADES BOARD, 1909 to 1913.

Particulars.	1909.	1910.	1911.	1912.	1913.
ORDINARY RECEIPTS.					
	£	£	£	£	£
Contributions ...	51,498	56,497	56,993	63,775	66,238
Receipts for services ...	3,212	3,990	3,719	6,011	5,941
Interest and sundries ...	3,821	2,451	3,420	6,965	3,669
Total ...	58,531	62,938	64,132	76,751	75,848
ORDINARY EXPENDITURE.					
Salaries ...	31,759	33,742	37,913	45,613	47,210
Interest and sinking fund ...	8,425	11,009	9,588	9,681	8,857
Other expenditure ...	18,347	18,187	16,631	21,457	20,281
Total ...	58,531	62,938	64,132	76,751	75,848

For the year 1913 the receipts of the Country Fire Brigades Board amounted to £16,359, and the expenditure to £16,528.

3. **Queensland.**—In the year 1911 there were twenty-six fire brigades organised in various towns in Queensland. The revenue of these brigades is derived chiefly from grants from the Government, from municipalities, and from the insurance companies, generally in equal proportions, and the following table gives these particulars for the year 1911 :—

QUEENSLAND.—FIRE BRIGADES.

Receipts.	Amount.	Expenditure.	Amount.
	£		£
From Government ...	4,722	Salaries and wages ...	8,248
Local authorities ...	4,805	Building, repairs, etc....	870
Insurance companies ...	4,711	Plant, stores, clothing, etc.	2,008
Other sources ...	787	Other ...	2,799
Total ...	15,025	Total ...	13,925

At the end of the year 1911 the fire brigades staffs comprised 54 permanent men, 294 partly paid, and 72 volunteers. The Metropolitan brigade at Brisbane and the South Brisbane brigade protect an area of 9½ square miles; their joint staffs comprise 55 men. They have three steam engines, one motor turbine, one chemical motor, eight hose reels, and 17,210 feet of hose. There are 38 telephone fire alarms and 35 call points.

4. **South Australia.**—The fire brigades of South Australia are managed by a Board consisting of five members, one being nominated by the Government, one by the Adelaide city council, one by the other metropolitan and country municipalities, and the other two by the contributing insurance companies. The Board is incorporated under the Fire Brigades Act 1913. The revenue of the Board is derived by contributions of three-ninths by the Government, four-ninths by the insurance companies, and two-ninths by the city of Adelaide and the other municipalities subject to the Act, the contributions for 1913 amounting to £22,340. Brigades are established in the following municipalities, viz., Adelaide, Kensington and Norwood, including St. Peter's, Unley, Port Adelaide,

Glenelg, Gawler, Kapunda, Moonta, Kadina, Port Pirie and Port Augusta. The strength of the brigades consists of 87 permanent firemen and 22 auxiliary firemen. The number of calls received during the year 1913 was 307, of which 10 were to fires of a serious nature.

5. **Western Australia.**—Under the Fire Brigades Act 1898, fire brigades were established in a number of the more important centres of population in the State. These brigades were under the control of local boards, and were in some cases municipal and in others volunteer.

An Act to make further provision for the protection of life and property from fire was passed in 1909 and came into operation on the 1st January, 1910. It is called the District Fire Brigades Act, and divides Western Australia into two fire districts under the control of the Western Australian Fire Brigades Board. The Board is constituted as follows:—Two members nominated by the Government; one member nominated by the Perth City Council; one member elected by the Municipalities of Kalgoorlie, Boulder, Coolgardie, and the Kalgoorlie Road Board; one member elected by the Municipalities and Road Boards other than those above-mentioned; three members elected by the Insurance Companies; and one member elected by the Volunteer Fire Brigades. The election of the Board takes place bi-annually, and its income is provided as follows:—Two-eighths by the Government, three-eighths by the Municipalities and Road Boards, and three-eighths by the Insurance Companies. The receipts for the year 1913 amounted to £30,270, and the expenditure to £30,530. The value of buildings and plant belonging to the Board is £46,715.

The whole of the Brigades throughout the State are now controlled by this Board, and number three purely permanent, twelve permanent and partially paid, four partly permanent and partly volunteer, two purely partially paid, and twenty-five purely volunteer brigades; making a total of forty-six. The staff includes a chief officer, deputy-chief officer, third officer, 16 other officers, 86 permanent firemen, 70 partially-paid firemen, and 477 volunteer firemen.

6. **Tasmania.**—Under the present system, the Government, the City Council, and the Fire Insurance Companies contribute equally to the annual expenditure of the Hobart Fire Brigade. It is intended to increase the scope of operations so as to include in the metropolitan district the suburbs of Queenborough, New Town and Glenorchy. Under the new scheme, the estimated annual cost is £2700. There are volunteer brigades under the control of local boards in most of the larger centres of population.

§ 6. Local Government Finance.

1. **Introduction.**—In the preceding parts of this section certain particulars have been given regarding local authorities in each individual State. It is proposed to here give in a comparable form for each State particulars regarding the financial operations of local governing bodies. The areas controlled by these bodies are variously known in the several States as cities, towns, boroughs, shires, municipalities, municipal districts, and road districts. The particulars given in the tables in the two next paragraphs relate to financial years ending as follow:—New South Wales: for the calendar year 1912. Victoria: 30th September, 1912, except Melbourne, 31st December, and Geelong, 31st August, 1912. Queensland: Calendar year, 1912. South Australia: Corporations, 30th November, and district councils, 30th June, 1912. Western Australia: 31st October, 1911, except road districts, 30th June, 1912. Tasmania: Calendar year, 1912.

2. **Number, Revenue, Expenditure and Valuation of Local Authorities.**—The following table gives particulars of the number, revenue, expenditure, and valuation of local authorities in each State and in the Commonwealth during the year 1912. It may be noted that, excepting in Tasmania, the metropolitan water supply systems are not under municipal control; the particulars given of revenue and expenditure for the five States other than Tasmania do not, therefore, include revenue and expenditure on account of these systems.

**NUMBER, REVENUE, EXPENDITURE, AND VALUATION OF LOCAL AUTHORITIES (a)
IN EACH STATE, 1912.**

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	C'wlth.
No. of local authorities (a)	324	208	173	178	148	51	1,082
RECEIPTS.							
Rates—	£	£	£	£	£	£	£
General ...	1,456,883	1,103,210	479,944	189,273	170,202	91,688	3,491,200
Other (b) ...	212,517	347,040	183,372	68,186	48,733	67,602	927,950
Government grants ...	428,557	161,513	11,525	47,392	90,676	26,051	765,714
Loans (c) & other sources	731,277	333,753	190,365	108,578	871,488	107,935	2,343,396
Total ...	2,829,534	1,945,516	865,406	413,429	1,181,099	293,276	7,528,260
EXPENDITURE.							
Works, services, etc. ...	2,106,235	1,421,325	677,019	280,284	364,672	179,451	5,028,986
Interest on loans and over-drafts ...	215,669	217,933	17,071	9,612	51,575	39,973	551,833
Redemptions, sinking funds, etc. ...	(d) 46,423	61,782	34,407	19,676	55,016	6,941	224,245
Administration ...	221,747	176,489	82,154	47,634	47,099	37,519	612,642
Other ...	(e) 161,865	173,577	114,148	59,124	597,172	32,910	1,138,796
Total ...	2,751,939	2,051,106	924,799	416,330	1,115,534	296,794	7,556,502
VALUATIONS.							
Capital value of property	£169,737,901	287,872,434	54,991,920	78,640,713	21,339,483	31,146,771	643,729,222
Annual value of property	d 2,582,788	15,423,445	(g)	3,750,186	h 1,381,751	1,534,789	(g)

(a) Including particulars for all areas controlled by local governing bodies responsible for the construction and maintenance of roads and streets, such areas being variously known in the several States as cities, towns, boroughs, shires, municipalities, road districts, etc. (b) Exclusive of rates for water-supply and sewerage in metropolitan and most other principal towns, such rates being collected by special boards or general Government. (c) Exclusive of loans in connection with extraordinary works of construction. (d) City of Sydney only. (e) Including redemptions, sinking funds, etc., for municipalities other than Sydney. (f) Unimproved capital value. (g) Not available. (h) Exclusive of District Road Boards.

3. Local Government Loans, 1912.—The following table gives particulars for each State of loans raised by local authorities during the year 1912, of loans current at the end of that year, of liability on account of interest and sinking fund, and of loans maturing during 1912 :—

PARTICULARS OF LOANS RAISED BY LOCAL AUTHORITIES, 1912.

Particulars.	N.S.W.	Victoria.	Q'land.	S.A.	W.A.	Tas.	C'wealth.
	£	£	£	£	£	£	£
Loans from general Government—							
Raised during year ...	...	...	52,335	...	6,700	15,425	74,460
Current at end of year ...	...	203,035	360,236	...	92,005	239,682	948,958
Loans from other sources—							
Raised during year ...	1,005,155	284,234	(a)	41,544	589,050	82,043	(a)
Current at end of year ...	6,463,696	4,808,915	(a)	223,234	1,385,777	681,739	(a)
Total—							
Raised during year ...	1,005,155	284,234	(a)	41,544	595,750	97,468	(a)
Current at end of year ...	6,463,696	5,011,950	1,295,162	223,234	1,477,782	975,421	15,447,245
Current loans, exclusive of those obtained from general Government, raised within the C'wealth	5,323,781	4,808,915	(a)	223,234	861,044	266,263	(a)
Annual liability on account interest	253,162	214,634	16,632	8,502	65,365	40,794	599,089
Total sinking fund at end of year	387,118	897,944	45,617	21,462	220,867	111,956	1,684,964
Amount loans maturing during year							
Redeemed ...	...	...	(b)	15,162	12,632	59,444	(a)
Renewed ...	120,535	(a)	(a)	1,900	...	5,875	(a)

(a) Not available. (b) In the case of loans from Government the periodical payments include interest and sinking funds. (c) Excluding £241 credited to three municipalities, but which was not in the hands of the Sinking Fund Trustees on 31st October, 1912.

SECTION XXVII.

INDUSTRIAL UNIONISM AND INDUSTRIAL LEGISLATION.

§ 1. Development of Trades Unions in Australia.

1. **General.**—In Australia, industrial unionism paved the way for industrial legislation. Conditions of employment were on the whole favourable to the investigation of industrial problems; and experimental legislation was possible because of the simplicity and directness of the aim of those engaged in industrial occupations. Moreover, the fact of the non-existence of the complex problems and organisations of older countries rendered initial legislation comparatively easy. Hence rapid changes in laws regulating industry occur and are likely to occur. To a great extent the trades unions were responsible for these laws. They steadily and continuously urged an amelioration of the condition of the working man, and by organisation and discipline they presented a united front to opposing forces, and attained many advantages by a recognition of the principle that unity is strength. Their efforts have resulted in improved conditions, particularly short hours, a healthier mode of life, and safeguarding against accident. One great aim of present-day industrial legislation has been said to be to extend "the reasonable comforts of a civilised community" to those engaged in every branch of industry. The standard of wages must therefore be maintained at a satisfactory level. Large organisations have been able to attain their ends by force of numbers, and, in the case of the great bulk of the artisan and similar classes, through the solidarity of their unions. The smaller and less perfectly organised industries, unable to maintain an effectual struggle with hope of success, are now receiving, by legislative enactment, the benefits already gained by the trades unions. Industrial organisation by means of unions now tends to embrace all classes of wage-earners.

While the demands of the early unionists have almost in their entirety been conceded by the employer, unionism nevertheless continues. Industrial legislation aims at restricting industrial warfare by a satisfactory adjustment of industrial differences, without derangement of the economic system, but it has not yet reached the stage when conflicts between employer and employees cease.

Each State of the Commonwealth has enacted, with considerable elaboration, legislation respecting trade unions and respecting the regulation of the conditions of industrial life, particularly those of factory and shop employment. Machinery for the regulation of wages and other matters connected with employment has also been established by legislation.

At the present time there is an obvious tendency to adjust such matters throughout Australia on uniform lines. The industrial condition of any State of the Commonwealth naturally reacts quickly on any other State. This is one of the consequences of a unified tariff, and of the fact that the general economic conditions of one part of the Commonwealth must necessarily affect very intimately every other part. An expression

of the intimacy of these economic and industrial relations of different parts was seen, for example, when the Arbitration Court in New South Wales refused to fix wages in the boot trade in that State at a higher rate than that fixed by the Wages Board in Victoria, because of the additional burden which such a rate would place on local manufacturers. Collective bargaining is encouraged, through the medium of legal tribunals where necessary, argument and diplomacy taking the place of open strife. Legislation gives legal form and status to the unions, and allots to them legal responsibility. The workman is encouraged, and in some cases compelled, to treat with his employer through his union, and in some cases the industrial courts are authorised to direct that preference be given to unionists.

2. History of Unionism in Australasia.—(1.) *Commencement of Unionism: the Eight Hours' System.* The first trade union in Australia was the "Operative Masons' Society," established in Melbourne in 1850. In 1851 a branch of the "English Amalgamated Society of Engineers" was founded in Sydney. For many years the only unions existing were practically those formed by the several branches of the building trades. They were all subject to the English law prohibiting conspiracies and combinations in restraint of trade, though it does not appear that such law was ever put in force in Australia. The main object of the early unions in Australia was the limitation of the working week to forty-eight hours. The minor and friendly society benefits that were usual amongst the unions of older countries were also desired; but the chief aim was the establishment of the eight hours' principle, and that aim for many years was the chief link between the unions. It is difficult to obtain detailed information concerning the unions prior to trade union legislation, but their early history generally resolves itself into an account of the early efforts put forth by metropolitan operatives to secure the limitation of the working day to eight hours. The desire to restrict Chinese immigration operated as a further incentive to combined effort. For the restriction to be effective, co-operation between the colonies was necessary. The question therefore promoted enlargement of view, and fostered amongst the workmen of Australia the sense of community of interest.

(ii.) *New Zealand.* The system was first put into practice in Australasia in 1848 by the "Otago Association," which purchased an area of land upon Port Chalmers, N.Z., and proceeded to build the town of Dunedin, under a system which recognised the eight hours day, thus instituting, in the New World of the south, that period of toil as the limit of the working day. Thus the system began voluntarily in New Zealand long before the unions that demanded and acquired it in Australia had come into existence. But many years elapsed in the Dominion before trades unionism became an established fact. The first Congress of New Zealand Trades was held in 1885. In that year, too, the general celebration of the eight hours' principle by the combined trades was inaugurated.

(iii.) *New South Wales.* In New South Wales, the operative masons obtained the eight hours' concession in 1855, after a strike; but little development of the movement was noticeable until 1871, in which year four eight-hour trades—the brickmakers, stone-masons, labourers, and carpenters—inaugurated the annual celebration.

(iv.) *Victoria.* The first Melbourne Eight Hours' procession was held in 1856, the trades taking part being the masons, bricklayers, carpenters and joiners, plasterers, painters, and slaters. In the following year nine trades and about 700 men took part in the function; but the principle of the Eight Hours' Day had been recognised, and new unions were quickly established under the influence and guidance of the pioneers of the movement.

(v.) *Queensland.* After the fever of the gold rush to the Fitzroy River had subsided, settled conditions prevailed in the building industry, and the trades, being well established and organised in Queensland, celebrated their inaugural festival of the eight hours in 1866. In Brisbane, as in Melbourne, the pioneer trade was the stonemasons.

(vi.) *South Australia.* In South Australia, the establishment of the eight hours' system by the unions was accomplished in 1873, the building trades, represented by the stone-cutters, painters, and carpenters, again being the leaders.

(vii.) *Western Australia.* The discovery of gold in Western Australia caused rapid development in the infant cities and towns of that State, and mechanics found abundant employment in the building trades. Unions were soon formed, and the eight hours became an established system in 1896.

(viii.) *Tasmania.* Trade Unions were established in Tasmania in 1874, the shipwrights of Hobart being the pioneer society. Here, as on the mainland, the eight hours' day was the chief aim of the operatives, and here, as in Sydney, it was conceded only after a strike. Within a few years, the general system of trades unions was instituted. The inaugural celebration of the system was celebrated in 1890.

(ix.) *The System Universal throughout Australasia.* No provision for eight hours was made in the original documents which set out the conditions of labour under which the members of the Otago (N.Z.) Association were to work in 1848. It was intended to insert a clause embodying the principle, but it was found that such a clause would be inoperative, as contracts to bind free settlers to serve under any conditions of labour beyond the seas were not provided for by any Imperial Statute. The system, however, was tacitly agreed to by both parties, and quietly and voluntarily the eight hours' day was established. Not so amicable were the methods by which it was acquired in the other colonies. There had to be unions of men and unions of trades, before the requisite forces were available to overbear opposition to the system, and, at any rate in two cases, the tradesmen resorted to strikes before the concession was granted. Generally it may be said that trades unions in the Commonwealth sprang out of the desire for an eight hours' day; and with the Western Australian celebration of 1896, trades unionism, with its eight hours' charter, completed its circuit of the Commonwealth. From 1880 to 1890 there was, in the States where industry was systematised, great activity in the organisation of labour, more particularly at the end of that period. In sympathy with the widespread industrial unrest in England the occurrence of similar unrest in Australia drew the wage-earners into the unions in large numbers.

(x.) *Organisation of Unions.* The first regular association of unions in Australia was the Trades Committee in Melbourne, formed in 1859, which afterwards became the present Trades and Labour Council. Similar councils now exist in all the States. Composed of delegates from the unions, they exercise a general care over the interests of their members.

(xi.) *Union Acts.* The Trade Union Acts of England and the collateral Conspiracy and Protection of Property Act were copied by the States, the Acts also providing for unions of employers. Except in Western Australia, the latter provision has been but slightly utilised, as apparently it offers no well-defined inducement. South Australia adopted the Acts in 1876, New South Wales in 1881, Victoria in 1894, Queensland in 1886, Tasmania in 1889, and Western Australia in 1902.

The Acts referred to provide for the legal recognition of combinations which come under the definition of trade unions; the registration of unions of seven or more persons, the registration of councils or other bodies to which registered trade unions are affiliated, the vesting of union property in registered trustees, with penal provisions in respect of defaulting officers. The registered unions are required to furnish annual returns of members and funds to a special department.

3. Operations and Organisation of Unions subsequent to the Acts.—(i.) *Unions.* Except as hereinafter mentioned, the Unions do not avail themselves of the Trade Union Acts to any large extent, in many cases neglecting to register.

In some States there is a considerable difference between the numbers of registered and unregistered unions, as, for instance, in Victoria, where there are 151 unions and only thirteen are registered.

The failure to register under the Trade Union Acts does not deprive the unions of the privileges conferred by the Conspiracy Acts.

(ii.) *Membership of Unions.* At the end of the year 1912, there were, in Australia, 433,224 members of trade unions.

(iii.) *Concerted Action.* The consummation of the eight hours' system, at which the early unions had aimed, was followed by demands for further concessions and privileges. An intercolonial congress of delegates of trades unions, modelled upon a similar conference of labour organisations in Great Britain, was first held in Sydney in 1879. At the second congress in Melbourne, in 1884, sixty-nine delegates from New South Wales, Victoria, and South Australia were present, representing forty-one unions, branches, or societies. Following the methods of European associations the Australian unions sought to achieve an improved condition for their members by the establishment of rules concerning minimum wage, limited hours of toil, the restriction of the number of apprentices and improvers, and the prohibition of the employment of non-union labour; political reforms, such as payment of Members of Parliament, "one man one vote," were also agitated. Some of the unions refuse to admit to membership any but skilled journeymen, on the ground that their object is to encourage the attainment of proper skill.

(iv.) *Representation in Parliament.* It was during the decade 1880-1890 that the trade unions of Australia espoused direct legislative representation and advocated State intervention between employer and employee. This policy has been called "new unionism." In New South Wales, trade unions obtained direct representation in Parliament in 1881, and again in 1883. A resolution affirming the desirability of Parliamentary representation of labour being carried at the congress of 1881, members representing the special interests of the wage-earners were elected to the Legislatures of some of the States, but little action was taken by the unions to obtain representation by men chosen from among their own ranks until after the great labour troubles of 1890-1892. In that period serious strikes occurred in the maritime, shearing and mining industries, and it was then that the Labour Party proper was formed. One direct result of the outbreak was the recognition of the desirability of peaceful settlement of disputes. The Political Labour Party was accordingly organised, and has since held considerable power in most of the States, frequently occupying the Treasury benches. In 1904, 1908-9, and 1910-13 Labour Governments occupied the Commonwealth Treasury Benches, the elections held in April, 1910, having resulted in the Labour party gaining an absolute majority in both of the Federal Houses of Parliament. The present Governments in

New South Wales, Western Australia and Tasmania are Labour. South Australia and Queensland have also had Labour Governments; and in Victoria the Labour party is an important element in Parliament.

Triennial federal conferences laid down a policy for the party. The Political Labour Council controls political and the Trades Hall Council trade union matters. The former consists of delegates from both unions and "branches." The branches are coterminous with State electoral districts, and nominate candidates for those districts. Candidates for the Commonwealth Senate are balloted for by all league members in the State, and for the Commonwealth House of Representatives by the branches in the constituency.

4. Registration under Trade Union Acts.—The benefits conferred by registering Trade Unions are not, in some of the States, held in much repute; consequently the statistics of registered trade unions of employees not only do not represent the position of unionism, but, in addition, the statistics themselves for past years are so defective as to be practically valueless. The particulars furnish no reliable indication of the numerical and financial position of Trade Unions. It will be seen that some of the registered unions fail to supply returns; this non-supply may lead to cancellation of the registration. Some of the unions have obtained the cancellation of their certificates of registration, the apparent reason being that they proposed registering under the Commonwealth Conciliation and Arbitration Act. In some States considerable activity has been displayed in the formation of new unions. In others the benefits sought are obtained by other means. In Queensland, some of the largest labour unions withdrew from registration during 1911, mainly on account of the necessity for closer restriction of their objects as set forth in their rules, consequent on legal decisions affecting trade unions. The following table shews the number of trade unions registered under Trade Union Acts at the end of 1912, together with their financial condition:—

TRADE UNIONS REGISTERED UNDER TRADE UNION ACTS, NUMBER, MEMBERSHIP AND FINANCIAL POSITION, 1912.

State.	Number of Unions.			Membership of Unions.			Receipts, 1912.	Expenditure, 1912	Funds at end of 1912.
	Employ-ers.	Employ-ees.	Total.	Employ-ers.	Employ-ees.	Total.			
	£	£	£						
New South Wales ...	13	196	209	4,018	197,126	201,144	199,157	173,474	151,543
Victoria ...	...	13	13	...	1,586	1,586	825	792	515
Queensland ...	7	36*	43	304	7,234*	7,538*	17,946*	18,351*	9,096*
South Australia†	...	...	...	...	...	...	...	...	...
Western Australia ...	1	73	74	18	23,464	23,482	42,361	34,634	29,173
Tasmania†	...	...	...	...	...	...	...	...	...

* Information regarding seven of these Unions not available, † Not available.

5. Registration under Industrial Arbitration Acts.—Western Australia and New South Wales up to 30th June, 1908, were the only States with Industrial Arbitration Acts under which industrial associations could be, and actually were, registered. The number of registered unions in New South Wales shewed a gradual increase from 1902 to 1907, the figures in the latter year being 109 unions of employers, with 3165 members, and 119 unions of employees, with 88,075 members. Under the Industrial Disputes Act, which succeeded the Arbitration Act of 1901, the information is not required to be furnished. Since the Act of 1908 has operated, industrial organisation has proceeded rapidly, owing to a very evident general desire on the part of the workers to obtain the status necessary to entitle them to the advantages offered by the Act. The Act of

1908 was repealed by that of 1912, and in 1912 there were 117 industrial unions of employers and 192 industrial unions of employees on the register. Of the former, 25 have ceased to exist, but have not been formally removed from the departmental register, and of the latter, 36, having permitted their registration in trade unions to be cancelled, may be regarded as having ceased to exist as industrial unions. In Western Australia, the employers' unions numbered 45, with 441 members, in 1904; 59 unions, with 520 members, in 1905; 57 unions, with 534 members, in 1906; 56 unions, with 552 members, in 1907; 48, with 409 members, in 1908; 47, with 408 members, in 1909; 46, with 444 members, in 1910; 46, with 554 members, in 1911; and 49, with 749 members in 1912. From 1904 to 1908 unions of employees were in a fairly stationary condition. Since 1909, however, there has been a rapid expansion. At the end of 1904 and 1905 there were 140 unions, with 15,743 and 15,461 members respectively; in 1906 there were 130 unions, with 16,015 members; in 1907, 121 unions, with 14,544 members; in 1908, 121 unions, with 15,187 members; in 1909, 122 unions, with 17,282 members; in 1910, 130 unions, with 20,429 members; in 1911, 152 unions, with 28,934 members; and in 1912, 158 unions, with 30,453 members. These figures include councils and associations. Registration under Commonwealth legislation began in 1906. In that and the four following years, there was but one union of employers; another was registered in 1911. The unions of employees registered were 20 in 1906, with 41,413 members; 24, with 57,306 members, in 1907; 37, with 69,536 members, in 1908; 7, with 14,161 members, in 1909; 10, with 3760 members, in 1910. Twenty-four unions of employees were registered in 1911. The membership given above is that at time of registration. At the end of 1912 there were 3 employers' organisations, with 351 members, and 96 employees' organisations, with 245,735 members, on the register under the Commonwealth Conciliation and Arbitration Act.

6. Total Number of Unions, 1912.—As already stated, the figures for trade unions registered under the Acts do not represent the position of unionism in Australia. In 1912 the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics was established, and by the cordial co-operation of the officials of the labour organisations, comprehensive figures relating to the development of organised labour are now available. The following table gives particulars of the number of trade unions, the number of branch unions, and the number of members in each State and the Commonwealth at the end of 1912:—

**TRADE UNIONS, BRANCH UNIONS, AND MEMBERS, STATES AND
COMMONWEALTH, 1912.**

State.		Number of Separate Unions.	No. of Branches.	No. of Members.
New South Wales	... ..	177	453	192,626
Victoria	... ..	151	241	116,557
Queensland	... ..	67	226	44,768
South Australia	... ..	78	62	37,336
West Australia	... ..	97	177	33,282
Tasmania	... ..	51	33	8,655
Total	... ..	621	1,192	433,224
Commonwealth*	... ..	408†	1,405	433,224

* Allowing for interstate excess. † Number of distinct organisations and interstate groups of organisations in the Commonwealth—not the total number of organisations, which are practically independent and self-governing. (See next page.)

In the preceding table the number of separate unions in each State furnishes the number of unions which are represented in each State, exclusive of branches within a State. That is to say, each union represented in a State is only counted once, regardless of the number of branches in that State.

Except in the last line, the number of branches indicates the number of branches of State head offices, which may, of course, themselves be branches of an interstate or larger organisation. In taking the total number of separate unions in the Commonwealth (see last line), it is obvious that, in the case of interstate and similar unions, there will be duplication, since each such union is counted once in each State in which it has any branches. In the figures given in the last line allowance has been made for this duplication. State branches of interstate or federated unions, as well as sub-branches within a State, are included under the heading "Branches" in the third column—last line. It should be observed, however, that the scheme of organisation of these interstate or federated unions varies greatly in character, and the number of separate Commonwealth unions does not fairly represent the number of practically independent organisations in Australia. In some of these unions the State organisations are bound together under a system of unification with centralised control, while in others the State units are practically independent and self-governing, the federal bond being loose and existing only for one or two specified purposes. It may be seen, therefore, that there are 408 distinct organisations and interstate groups of organisations in the Commonwealth, having 1405 State branches and sub-branches, and a total of 433,224 members.

7. Development of Trade Unions in Australia, 1891 to 1912.—The following table shews for the years specified the total number of trade unions in the Commonwealth, and the number and membership of those unions for which returns are available. The estimated total membership of all unions is shewn in the last line. The number of unions specified is the sum of the number of separate unions represented in the several States, no deduction having been made for interstate excess.

The figures given do not include particulars of comparatively small and unimportant unions which were in existence prior to the year 1912, but which, by that year, had either become amalgamated with other unions or had been disbanded or become defunct. Particulars for the more important unions in existence prior to 1912, but not in existence in that year, have, however, been included in all cases where possible. The actual returns received at this Bureau from trade unions have, in some instances, where memberships for past years were not given, been supplemented from particulars published by the State Registrars of Trade Unions.

NUMBER AND MEMBERSHIP OF TRADE UNIONS IN COMMONWEALTH, 1891 to 1912.

Particulars.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Total number of unions	124	134	198	302	323	378	419	482	573	621
No. of unions for which membership available	72	83	139	253	286	334	375	442	542	621
Membership of these unions	31,871	34,108	68,218	147,049	172,310	212,483	244,747	277,047	344,999	433,324
Estimated total membership of all unions	54,888	55,066	97,174	175,529	194,602	240,475	273,464	302,119	364,732	433,224

These figures shew that while the number of unions in 1912 was just over five times the number in 1891, the estimated membership during the same period increased nearly eight times. During the last six years the estimated annual increase in membership was greatest in the year 1912, when it amounted to no less than 68,492.

The present tendency of the trade union movement in Australia is towards "closer unionism," generally by the organisation of the workers in two or more States into interstate or federated unions, and by the grouping together of trades or industries more or less closely allied. Particulars are not available for past years as to the number of separate organisations in the Commonwealth, that is, allowing for interstate excess in

the enumeration of unions within each State. It appears certain, however, that the number of separate organisations and interstate groups of organisations in the Commonwealth has, owing to the tendency referred to, increased to a less extent than the figures in the preceding table indicate.* It is expected that in future this tendency will be clearly reflected in the returns, in which deductions will be made for interstate excess.

8. **Interstate or Federated Unions, 1912.**—The following table gives particulars as to the number and membership of interstate or federated unions in 1912 :—

**NUMBER AND MEMBERSHIP OF INTERSTATE OR FEDERATED UNIONS
IN THE COMMONWEALTH, 1912.**

Particulars.	Unions Operating in—					Total.
	2 States.	3 States.	4 States.	5 States.	6 States.	
Number of Unions ...	20	11	17	14	10	72
Number of Members ...	31,358	18,147	55,517	43,548	131,201	279,771

It appears, therefore, that 72 out of the 408 separate associations and groups of associations in the Commonwealth are organised on an interstate basis. The membership of these 72 unions amounts to 279,771, or no less than 64.6 per cent. on the total membership (433,224) of all unions.

9. **Central Labour Organisations.**—In each of the metropolitan towns, as well as in a number of other industrial centres, delegate organisations, consisting of representatives from a group of trade unions, have been established. Their revenue is raised by means of a per capita tax on the members of each affiliated union. In most of the towns where such central organisations exist, the majority of the local unions are affiliated with the central organisation, which is usually known as the Labour or the Trades Hall Council or the Labour Federation. In Queensland and Western Australia a unified system of organisation extends over the industrial centres throughout each State. In each of these States there is a provincial branch of the Australian Labour Federation, having a central council and executive, a metropolitan and branch district councils, to which the local bodies are affiliated. The central council, on which all district councils are represented, meets periodically. In the other four States, however, the organisation is not so close, and though provision usually exists in the rules of the central council at the capital town of each State for the organisation of district councils or for the representation on the central council of the local councils in the smaller industrial centres of the State, the councils in each State are, as a matter of fact, independent bodies.

The table below shews the number of metropolitan and district or local labour councils, together with the number of unions and branches of unions affiliated therewith, in each State in February, 1913 :—

CENTRAL LABOUR ORGANISATIONS—NUMBER AND UNIONS AFFILIATED,* 1913.

Particulars.	N.S.W.	Vic.	Q'land,	S.A.	W.A.	Tas.	C'w'th.
No. of Councils ...	3	4	2†	4	11	1	25
Approximate No. of Unions and Branch Unions Affiliated ...	151	186	21	73	130	23	584

* On page 905 it is shewn that the number of separate organisations and interstate groups of organisations in the Commonwealth in 1912 was 408, compared with 621, the sum of the separate unions in the several States.

† In addition, two important unions are directly affiliated to the Provincial Council of the Australian Labour Federation.

The figures given in the preceding table as to number of unions do not necessarily represent separate unions, since the branches of a large union may be affiliated to the local trades councils in the several towns in which they are represented.

Between the trade union and the central organisation of unions may be classed certain State or district councils, organised on trade lines and composed of delegates from separate unions, the interests of the members of which are closely connected by reason of the occupations of their members, such, for example, as delegate councils of bakers, bread carters and mill employees, or of unions connected directly or indirectly with the iron, steel or brass trades, or with the building trades.

§ 2. Laws Relating to Conditions of Labour.

1. **Tabular Statement of Statutes affecting Labour.**—The statutes in force at the beginning of 1914 in the several States of the Commonwealth, which, more or less directly, affect the general conditions of labour, are shewn in the table below. Where merely an incidental reference to labour conditions is made in a statute, as is the case with, *e.g.*, the Hawkers and Pedlars Act 1892 of Western Australia, or the Firms Registration Act 1899 of South Australia, or the Health Act sgenerally, the statute is not included in the table.

LABOUR LAWS—TABLE OF STATUTES IN FORCE IN AUSTRALIAN STATES, 1913.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
1. <i>General</i> — Factories & Shops Act 1912 Early Closing 1899, 1900, 1906, and 1910 Saturday Half Holiday 1910 Clerical Workers 1910	Factories and Shops 1912 Factories and Shops 1912 (2)	Factories and Shops 1900 and 1908	Factories 1907, 1908 and 1910 Early Closing 1911 and 1912	Factories 1904 (2) and 1911 Early Closing 1902, 1904 (2), 1911 and 1912 (Consolidated)	Factories 1910 and 1911 Wages Boards 1910 and 1911 Chimney Sweepers 1882 Shops Closing 1911
2. <i>Prevention of Strikes and Regulation of Rates of Wages</i> — Industrial Arbitration 1912	Factories and Shops (as above)	Industrial Peace Act 1912	Factories Acts 1907-10 Industrial Arbitration Act 1912	Industrial Arbitration Act 1912	—
3. <i>Mining Industry</i> — Mines Inspection 1901 Coal Mines Regulation 1902, 1905, and 1910 Miners' Accident Relief 1900, 1901 and 1910	Mines 1897 Coal Mines Regulation 1909	Mining 1898, 1901 1902, and 1912 (2) Mines Regulation 1910 and 1912	Mining 1893	Mines Regulation 1906 and 1911 Coal Mines Regulation 1902 Mining 1904	Mining 1900, and 1911
4. <i>Security of Wages to Wage Earners</i> — Contractors' Debts 1897	Employers and Employees 1890, 1891 and 1901	Contractors' & Workmen's Lien 1906 Wages 1870 and 1884	Workmen's Liens 1893-6	Workmen's Wages 1898	—
Attachment of Wages Limitation 1900	—	Wages (as above)	Wages Attachment 1898	—	Wages Attachment 1900

LABOUR LAWS—TABLE OF STATUTES.—Continued.

New South Wales.	Victoria.	Queensland.	South Aust.	Western Aust.	Tasmania.
*Truck 1900 " 1901	—	Factories and Shops (as above)	Factories (as above)	*Truck 1899 * " 1900 * " 1904	—
Bankruptcy 1898 (preference to wages)	Insolvency 1897	Insolvency 1874 Insolvency 1876	Insolvency 1886 " 1887 " 1896	Bankruptcy 1892 " 1898	Bankruptcy 1870 Bankruptcy 1899
5. Accommodation, Homes, &c.—					
Shearers' Accommo- dation 1901	—	Shearers' and Sugarworkers' Accommoda- tion 1905 Do. 1906	Shearers' Accom- modation 1905	Shearers' Accom- modation 1912	—
—	Closer Settle- ment (Work- ers' Homes) 1904	—	—	—	—
—	—	Workers' Dwell- ing 1909 and 1912.	—	Workers' Homes 1911 & 1912 (2) Navigation 1904 1907 Merchant Ship- ping Act Ap- plication 1903	—
6. Inspection of Ma- chinery, &c.—					
—	Boilers' Inspec- tion 1906	Inspection of Machinery & Scaffolding 1908 and 1912	Steam Boilers and Engine Drivers 1911 and 1913 Lifts' Regula- tion 1908 Scaffolding In- spection 1907 and 1908	Inspection of Machinery 1904 and 1911	Inspection of Machinery 1902 " " 1909 White Phos. Matches Pro- hibition 1911
7. Trade Unions—					
Trade Unions 1881	Trade Unions 1890	Trade Unions 1886	Trade Unions 1876	Trade Unions 1902	Trade Unions 1889
8. Relations of Mas- ters and Servants—					
Masters & Servants 1902	Employers and Employees 1890, 1891 and 1901	†Apprentices 1828 " 1844 Master and Ser- vants 1861	Masters & Ser- vants 1878 Defence of Workers 1909	Masters and Ap- prentices 1873 Masters & Ser- vants 1892	Masters & Ser- vants 1856 " " 1882 " " 1884 " " 1887
—	Servants' Regis- try Offices 1897	—	—	Employment Brokers 1909 and 1912 (Consolida- tion)	—
9. Liability in case of Accidents—					
Employers' Liability 1897	Employers and Employees 1890 (Employers' Li- ability) and 1901	Employers' Lia- bility 1886-8	Employers' Lia- bility 1884-9	Employers' Lia- bility 1894	Employers' Li- ability 1895, 1898 and 1903
Workmen's Com- pensation 1910	Workers' Com- pensation, 1914	Workers' Com- pensation 1905 and 1909	Workmen's Compensation 1911	Workers' Com- pensation 1902 1909 and 1912	Workers' Com- pensation 1910

* The "Truck" system, as applied to labour, was one by which the master obtained the labour of his servants in exchange for goods or commodities on which it is stated he generally secured a profit. The system is now almost entirely suppressed by the various statutes enacted. † New South Wales Acts unrepealed in Queensland after Separation in 1859.

2. Benefits sought to be Conferred by the Acts.—(i.) *General Provisions.* The legislation enacted has generally had for its object the shortening of hours, improving and fixing standard rates of wages, provision of sanitary accommodation, ventilation and cleansing of premises, safeguarding from accident, and general amelioration of the conditions of labour, particularly that of females and children, in factories. The principal provisions of these statutes are set out in the table hereinafter.

(ii.) *Historical.* The first Australian Factories Act was passed in 1873 in Victoria, and became law on 1st January, 1874. It was entitled "The Supervision of Workrooms and Factories Statute," and contained only six sections. Its principal provisions were (a) that any place in which not less than ten persons were engaged for hire in manufacturing goods should be constituted a factory; (b) that such factories, as to building, sanitation, etc., should be subject to regulations made by the Central Board of Health; and (c) that no female should be employed for more than eight hours in any one day without the permission of the Chief Secretary. The administration of the Act was entrusted entirely to the local Boards of Health, and the system was found to be less effective than was hoped. The conditions which have given rise to trouble in the old world tended to reproduce themselves in the young and growing industries of the States. Factory workers had to contend with the absence of security for a living wage, unsatisfactory sanitary surroundings, and unchecked and unscrupulous competition of Chinese in certain trades. The advocacy of legislation to control the conditions of employment became pronounced in Victoria in 1880, and a strike of tailoresses in Melbourne in 1882 led to a recognition of the real state of affairs. As a result of unsatisfactory working under the local governing bodies, and on account of agitation of the operatives, a commission was appointed in 1883, and reported the necessity of legislation for the regulation of factories, and in particular pointed out the fact that men were compelled to toil for as many as eighteen hours and women sixteen hours a day. It also shewed that the condition of out-workers was very undesirable, and that the apprenticeship system was frequently used to obtain labour without remuneration, apprentices being dismissed upon asking for payment at the end of their time. The Factories and Shops Act 1884, while providing for the suppression of many evils in respect of accommodation and lengthy hours, did not touch the two last mentioned. It provided for Government inspection, and also that six persons should constitute a factory if the premises were situated in a city, town or borough. In 1887 a short amending Act was brought in to remedy some defects that were found to exist. Its principal provision was that any place in which two or more Chinese were engaged should be deemed a factory. In 1893 a further enactment reduced the number of persons constituting a factory to four. Another Royal Commission sat in 1895, resulting in the Act of 1896, which dealt with matters previously untouched, and the system of regulation was carried on by the Act of 1900 and the complete codification of the law in 1905, and again in 1912.

Similar conditions to those which existed in Victoria were found to prevail in other States. New South Wales and Queensland first adopted regulative measures in 1896, South Australia in 1894, and Western Australia in 1902. Tasmania adopted the Victorian Act of 1873 in 1884.

The same remarks apply in a general way to the condition of employees in shops.

3. Limitation of Hours.—(i.) *Factories.* As already remarked, the adoption of the eight hours' system for adult males has generally been the outcome of the representations made by the trade unions. Except in New Zealand, there is no general legislation to enforce the principle, although there is now a general recognition of it. A week of forty-eight hours is the usual working week. The larger unions, however, have lately moved for a *net* day of eight hours, with Saturday half-holiday, no loading of other week days being permitted by way of compensating for the Saturday afternoon. Under this scheme there are, for five days, equal divisions for periods of labour, recreation, and rest, and four hours' work on Saturday, making a working week of forty-four hours. In the majority of occupations, forty-eight hours weekly is the recognised limit of work. On

the establishment of Wages Boards and Arbitration Courts, in the States where those institutions exist, the authorities thus created adopted the rule as part of their determinations and awards wherever it seemed reasonably practicable. In some of the larger classes of building trades, the hours have been reduced to forty-four a week, and in some technical and specialist trades, a lower maximum has been fixed, such for example, as the type-setting machine operators in Victoria, for whom the maximum has been fixed by the Wages Board at forty-two hours weekly. Reasonable provision is made by statute or award for work performed outside the scheduled hours. Organisations of employees, however, oppose overtime in any industry until all the operatives in that industry are working full time.

In the case of women and children there has been very general enactment in the States of the forty-eight hours' limit, and in addition, the maximum periods of continuous labour, and the intervals of cessation therefrom, have been prescribed in all the States. New Zealand has fixed a weekly maximum of forty-five hours for females and boys under 16. The first enactment of the forty-eight hours' limit in Australia was in 1873, when the Parliament of Victoria fixed that period for women and girls in factories.

(ii.) *Shops.* All the States have statutes containing provisions respecting the hours during which shops in large centres may be kept open for business. These provisions, in effect, not only limit the hours during which shop-hands may be employed, but apply also where the shops are tended by the proprietor alone, or by himself and family, with, however, certain exceptions. In Victoria, for example, shops wherein not more than one assistant, whether paid or not, was employed, were permitted to remain open for two hours a day longer than other shops of the same class. The object of this was to relieve the hardship which existed for such persons as, for example, widows who were wholly dependent for a livelihood upon the casual trade of small shops. It is, however, reported that little or no benefit accrued from the permission. In each of the States the closing time of shops, except those specially exempted, is 6 p.m. on four days of the week, 10 p.m. on one day (except 9 p.m. in Queensland, South Australia, and Western Australia), and 1 p.m. on one day—thus establishing a weekly half-holiday. In Western Australia the opening hour is fixed at 8 a.m. In addition to fixing the closing hour, the total daily and weekly working hours are delimited in the case of women and children. In some States, butchers' shops must be closed an hour earlier than other retail establishments, the reason being the early hour at which assistants must start to attend to the markets and early morning trade.

(iii.) *Hotels, etc.* Establishments, the opening of which in the evening is presumably necessary for public convenience—such as hotels, restaurants, chemists' shops, etc.—are required to remain open for longer hours or are permitted to do business during hours prohibited in other establishments.

(iv.) *Half-holidays.* The provisions of the early closing laws differ somewhat in each State, but the main objects, namely, the restriction of long hours of labour, are identical throughout. Formerly, in some of the States, there were, and there are still in others, provisions making the early closing of a business, or the selection of a day for a half-holiday, dependent upon the option of the majority of the business people concerned, or upon the local authority. The anomalous results of the system whereby shops on one side of the street bounding two municipalities were open, when those upon the other side were closed, led to the introduction of the compulsory system, whereby the hours of business are absolutely fixed by statute. In Queensland, the day of the weekly half-holiday is fixed for Saturday. In Victoria also the Saturday half-holiday became compulsory in 1909, and in New South Wales in the following year, and there is a strong movement throughout the Commonwealth in favour of closing on the afternoon of that day.

(v.) *Exempted Trades.* The hours for shops exempted from the general provisions of the Acts are also prescribed, and special holidays are provided for carriers.

4. **Other General Conditions of Labour.**—Measures for the protection of life, health, and general well-being of the worker, tabulated hereunder, exist in most of the States. Though in some instances founded upon English legislation, many of the provisions are peculiar to Australia. Despite experience and continued amendment they have not even yet attained to a settled form. Of the Australian States, Victoria originally had the most complete system of industrial legislation. Other States gradually adopted the Victorian statutes, either *en bloc* or with amendments suggested by local conditions. Western Australia followed very closely the legislation of New Zealand, where also the measures for the amelioration of the industrial conditions are enforced by law.

5. **Administration of Factories and Shops Acts.**—The provisions of Factories and Shops Acts and of the Early Closing Acts in some of the States are consolidated under a single Act, but in others are separate enactments. The chief provisions of the principal Acts for registration, administration, record-keeping, etc., and of regulations under those Acts, are set out in the following summary :—

- (a) Factories are defined to be places where a certain number of persons are employed in making or preparing goods for trade or sale, or in which steam or other power is employed, or where special classes of industry are carried on. In some States the employment of a Chinese, in some of any Asiatic, constitutes the place a factory.
- (b) A Minister of the Crown administers the Act in conjunction with a Chief Inspector of Factories. Inspectors visit the factories with full powers of entry, examination, and enquiry; these are of both sexes, females being employed in that portion of the work where a woman is particularly necessary. Broadly speaking, these powers confer upon the Inspector the right to enter, inspect, and examine, at all reasonable hours by day and night, any factory where he has reason to think anyone is employed; to take a police constable, if necessary, to assist him in the execution of his duty; to require the production of all certificates, documents, and records kept by the occupier, in accordance with the terms of the enactments; to examine, either alone or in the presence of any other person, every person whom he finds in a factory; to make whatever examination he deems necessary to ascertain whether the provisions of the Act are complied with.
- (c) Registration of factories before occupation is obligatory. Description of premises and statement of the work to be done must be supplied, and a certificate of suitability of premises obtained.
- (d) A record of all employees, giving the names, ages, wages, and work of each under a certain age (18, 20, 21, etc.) must be kept and filed in the Chief Inspector's office.
- (e) Names and addresses of district inspectors and certifying medical practitioners must be posted; also the working hours, the holidays, and the name, etc., of the employer.
- (f) Records of out-work must be kept, containing the names and remuneration of workers, and stating the places where the work is done. Out-workers are required to register.
- (g) Places in which only the near kin of the occupier are employed are generally exempt from registration.
- (h) Meals may be prohibited in workrooms, etc. In some States occupiers are required to furnish suitable mealrooms.

- (i) The employment in factories of young children is forbidden, and medical certificates of fitness are required in the case of young persons under a certain age. Special permits, based on educational or other qualifications, may be issued for young persons of certain ages.
- (j) Guarantees of an employee's good behaviour are void unless made with the consent of the Minister.
- (k) Persons in charge of steam engines or boilers must hold certificates of service or competency.
- (l) Provision (safeguarding against accident) is made for the fencing off and proper care of machinery, vats, and other dangerous structures. Women and young persons are forbidden to clean machinery in motion or work between fixed and traversing parts of self-acting machinery while in motion; and dangerous trades are specified in which a minimum age is fixed. Notice of accidents must be sent to the district inspector. (Dangerous trades are generally under the administration of Boards of Health.)
- (m) Provision is made for the stamping of furniture, the object being to disclose whether it is made by European or Chinese labour.
- (n) Minimum wage provisions are inserted. Premiums to employers are forbidden.
- (o) Sanitation and ventilation must be attended to, and fresh drinking water supplied. Separate and adequate sanitary conveniences for each sex are required.
- (p) Shopkeepers are required to provide proper seating accommodation for female employees. (In some States this is the subject of special legislation.)
- (q) A dressing-room for females must be provided in factories the manufacturing process of which requires a change of dress.
- (r) Adequate protection must be made against fire, and efficient fire-escapes provided.
- (s) Wide powers of regulation are granted to the Executive and heavy penalties imposed, including a penalty by way of compensation to any person injured or the family of any person killed through failure to fence machinery and other dangerous structures.

6. **Registered Factories.**—The number of establishments registered under Factories Acts is shewn below:—

FACTORIES REGISTERED UNDER ACTS, 1913.

State.	No. of Registered Factories.	Numbers Employed.		
		Males.	Females.	Total.
New South Wales ...	5,561	67,046	28,538	95,584
Victoria ...	8,089	69,496	41,051	110,547
Queensland* ...	2,908	20,217	8,449	28,666
South Australia† ...	1,845	14,872	5,590	20,462
Western Australia ...	1,091	10,594	3,259	13,853
Tasmania ...	957	7,504	1,460	8,964
Commonwealth ...	20,451	189,729	88,347	278,076

* At 30th March, 1913.

† At 31st December, 1912.

7. **Comparative Statement of Factories Law in Australia.**—The tables which follow shew at a glance the chief provisions of the Factories and Shops Acts in the Commonwealth:—

A.—EMPLOYMENT IN FACTORIES.—COMPARATIVE VIEW OF

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Principal Acts</i>	Factories and Shops 1912.	Factories and Shops 1912 " " 1912 (2).	Factories and Shops 1900. " " 1908.
<i>Application of Acts— Limitations</i>	In districts proclaimed. Not applicable where all the workers are members of the same family. Not applicable to woolsheds, dairies, or ships. Governor may exempt any factory or class of factory in any district.	In cities, towns and boroughs; also shires to which ex- tended. Not applicable to dairying, agricultural, horticultural, viticulatural and pastoral occupations. Not applicable to laundries attached to prisons or religious and charitable institutions.	Only in areas proclaimed. Not applicable to prisons, re- formatories, dairies, mines agricultural buildings, and domestic workshops. Governor may exempt parti- ally or wholly any factory or class of factories in a given district.
<i>Definition of Factory— By Nos. Employed</i>	Four or more.	Four or more.	Two or more (including occupier).
" Asiatics "	One or more Chinese.	One or more Chinese.	One Asiatic.
" Power used "	Steam or mechanical.	Steam or mechanical.	Steam or mechanical.
" Special classes included	Bakehouses.	Bakehouses, laundries, dye- works, quarries, clay-pits, furniture. Gas and electric light, &c., works.	Bakehouses, laundries.
<i>Administration</i>	Minister of Labour.	Minister of Labour.	Secretary for Public Works.
<i>Inspectorate</i>	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
<i>Registration</i>	Seven days' prior notice.	Fourteen days' notice after occupation. Annual re-registration.	Seven days' prior notice.
<i>Outwork</i>	Occupier of factory to keep record, shewing places where work done and rates of payment.	Occupier to keep record of description, quantity, re- muneration, names and addresses. Out-workers must register in clothing, wearing-apparel, or boot trades.	Sub-contractors' premises subject to factory regula- tions. Occupier to keep records shewing places, de- scription, and quality of work; nature and amount of remuneration paid. Out- workers must register. Sub-letting forbidden.
<i>Meals in Workroom</i>	Minister may forbid while work is going on; he may require provision of a suit- able eating-room.	Forbidden while work going on, unless Chief Inspector permits. Forbidden if dangerous trade conducted.	Minister may forbid meals being taken in factories; he may require provision of suitable eating room.
<i>Sanitary Health and Safety Provisions</i>	Factories to be clean, whole- some, and well ventilated. Over-crowding forbidden. Unhealthy persons under six- teen may be suspended from daily work. Avoidance of infection pre- scribed. Factories to be thoroughly cleaned once in fourteen months. Bakehouses and furniture factories not to be used as sleeping places. Seats to be provided for fe- males. Proper necessary precautions to be taken against fire, and efficient fire escapes to be provided.	Factories to be clean, whole- some, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months. Bakehouses to be washed once every six months Factories and bakehouses not to be used as sleeping places. Wet spinners must be pro- tected. Efficient fire escapes to be provided, and fire appli- ances kept ready. Doors, &c., to be kept free from obstruction.	Factories to be kept clean, wholesome, and well venti- lated. Over-crowding forbidden. Suspension of work by un- healthy persons may be enforced. Avoidance of infection pre- scribed. Fresh drinking water to be provided. Factories to be thoroughly cleaned once in twelve months. Bakehouses not to be used as sleeping places. Seats to be provided for fe- males. Proper necessary precautions to be taken against fire.
<i>Dangerous Machinery</i>	Must be fenced. Employment of women and boys forbidden at certain machines.	Must be fenced. Employment of women and boys forbidden. First-aid ambulance-chest to be kept on premises.	Must be fenced.*
<i>Minim Wage per week</i>	4s. No premiums or bonus on be- half of apprentices is per- mitted.	2s 6d No premium is to be de- manded from female ap- prentices and improvers in clothing trades, or any ap- prentice or improver em- ployed in a shop.	5s. No premium is permitted from apprentices without permission of Inspector.

* See Machinery and Scaffolding Act 1908.

LEADING FEATURES OF ACTS IN FORCE IN AUSTRALIA, 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Factories 1907, 1908, and 1910.	Factories 1904. " 1904 (2).	Factories 1910 and 1911.
In metropolitan area and such other places as determined by Parliament. Not applicable to domestic servants and agricultural and pastoral pursuits.	In districts proclaimed. Not applicable to mines, dairies, ships, prisons, reformatories, domestic (other than Asiatic) workshops. Governor may exempt any factory.	Whole State. Not applicable to mines, ships, prisons, reformatories, rural industries, charitable institutions. Governor may exempt any factory.
Any one person.	Six or more.	Four or more.
Laundry, dyeworks.	One Asiatic. Steam or mechanical. Bakehouses, laundries.	One Asiatic. Steam or mechanical. Bakehouses, quarries.
Minister of Industry.	Honorary Minister.	Chief Secretary.
Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.	Inspectors with full powers of entry, examination and enquiry.
Twenty - one days' after occupation.	Prior notice. Annual re-registration if Asiatics employed	Twenty-one days' prior notice.
Occupier to keep record. Out-workers to register names and addresses.	Occupier to keep record of names and addresses, and quantity and description of work done. Sub-letting forbidden.	Occupier to keep record of names and addresses, and quantity and description of work done, also of hours worked and wages paid.
Minister may forbid meals in factories carrying on noxious trades; he may require provision of suitable eating-room.	Forbidden for women and boys, except with Inspector's written permission.	Forbidden where employees working. In certain factories meal room to be provided.
Factories to be kept wholesome, clean, and well ventilated. Over-crowding forbidden. Factories to be thoroughly cleaned once in fourteen months Adequate protection to be made against fire.	Factories and connected yards to be clean, wholesome, and well-ventilated. Over-crowding forbidden. Unhealthy persons may be forced to suspend work. Goods, clothing, etc., to be disinfected where necessary. Fresh drinking water to be provided. Thorough cleaning to be regularly done. Bakehouses not to be used as sleeping places. Efficient fire escapes to be provided and other necessary protection to be made against fire.	Factories to be clean, wholesome, and well ventilated. Overcrowding forbidden. Factories may be required to be cleaned once in fourteen months. Factories not to be used as sleeping places. Doors, &c., to be kept clear of obstructions, and fire-prevention appliances kept ready for use. Doors to open outwards.
Must be fenced.	Must be fenced.*	...
Employment of children under sixteen may be forbidden.	Inspector may prohibit as dangerous machine. Employment of females and boys forbidden.	...
4s. No premium is to be paid by female apprentices in clothing trades.	...	4s. No premium in respect to employment is permitted.

* See Inspection of Machinery Act 1904.

B.—RESTRICTIONS AS TO EMPLOYMENT OF WOMEN

HEADING.		NEW SOUTH WALES.	VICTORIA.*	QUEENSLAND.
<i>* Ordinary Age of Admission to Factory</i>		14	Boys 14 years Girls 15 years	14
<i>Maximum Working Hours of Women and Young Persons</i>	Per week	Boys under 16 and all females 48 hours	Boys under 16 and all females, 48 hours	Boys under 16 and all females, 48 hours
	" day	...	Do., 10 hours. Females under 18 or males under 16 as type-setters, 8 hours	...
	Maximum hours of continuous labour	Boys under 18 and all females 5 hours	Boys under 18 and all females, 5 hours.	Do., 5 hours
	Interval	Do., $\frac{1}{2}$ hour	Do., $\frac{1}{2}$ hour	Do., $\frac{1}{2}$ hour
<i>Prohibited Hours of Work</i>		Boys under 16 and all females 6 p.m. to 6 a.m.	Girls under 16, 6 p.m. to 6 a.m. Males under 16 and all females, after 9 p.m.	Girls under 18, 6 p.m. to 6 a.m. Boys under 16, 6 p.m. to 6 a.m.
<i>Overtime—Limitation—Per day</i>		Three hours	Three hours	Three hours
" week		Three consecutive days	One day	Two consecutive days
" year		Thirty days	Ten days	Fifty-six hrs per wk. not to be exceeded.
<i>Overtime Pay</i>		Time and a-half	Wage workers, time & a-half Piece workers, additional 3d. per hour	Forty days Time and a-half, but not below 6d. per hr.
<i>Prohibition of Employment after Childbirth</i>		4 weeks	...	...
<i>Restrictions and Prohibitions of Employment affecting Women and Young Persons in Dangerous Trades</i>	Type-setting	Persons under 16	Boys under 14; girls under 15	...
	Dry grinding and match dipping	Persons under 16+	Persons under 16	...
	Manufacture of bricks and tiles	Girls under 18	Girls under 16	...
	Making and finishing of salt	Girls under 18	Girls under 16 •	...
	Melting or annealing of glass	Boys under 16; girls under 18	Girls under 18	...
	Silvering of mirrors by mercurial process; manufacture of white lead	Persons under 18	Persons under 18	...
	Cleaning of machinery in motion, mill gearing, etc.	All females; boys under 18½	All females; boys under 18	All females; boys under 18
	Charge of lift	All females; boys under 16½	Persons under 18	All females; boys under 16

* The ages given are those at which admission to factory labour is unrestricted. In some States younger children are admitted if having passed school standards, or by special permit from the Minister or inspector.

AND YOUNG PERSONS IN FACTORIES IN AUSTRALIA.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
13	14	14
Boys under 16 and all females, 48 hours Do., 10 hours	Boys under 14 and all females 48 hours Do., 8½ hours	Boys under 16 and all females, 48 hours Females, 10 hours
Do., 5 hours	Do., 5 hours	Boys under 18 and all females, 5 hours
Do., ½ hour	Do., ¾ hour	Females & young persons, 1 hour
Females, after 9 p.m.	Females, 6 p.m. to 8 a.m.	Boys under 16 and all females, after 9 p.m.
Boys under 16, after 9 p.m.	Boys under 14, 6 p.m. to 7.45 a.m.	...
...	Three hours	55 hours per week not to be ex- ceeded
Seven hours per week	Two consecutive days	...
100 hours	Thirty days	200 hours (Fruit, jam, etc., factories ex- empted in certain months)
Time and a-quarter	Time and a-quarter	Time and a-quarter
...	4 weeks	...
Boys under 16 and all females not more than 8 hours per day, and not after 6 p.m. or before 6 a.m.	Girls under 15	Boys under 16 and all females not more than 8 hours per day, nor between 9 p.m. and 6 a.m.
Persons under 16	...	Persons under 16
Girls under 16	Girls under 16	Girls under 16
Girls under 16	Girls under 16	Girls under 16
Boys under 14; girls under 18	...	Females under 18
Persons under 18	All females; boys under 18	All females; boys under 18
All females; boys under 18	All females; boys under 18	...
All females; boys under 18	Females under 21; boys under 16	...

† In N.S.W. this restriction applies also to casting from molten lead. ‡ In N.S.W. this restriction applies also to persons in charge of or attending to any engine or boiler.

§ In N.S.W. this restriction applies also to any machinery classed as dangerous.

C.—EMPLOYMENT IN SHOPS.—COMPARATIVE VIEW OF LEADING

HEADING.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
Acts	As for factories Early Closing Act Minimum Wage Act	As for factories	As for factories
Statutory Maximum Hours of Employment.			
(a) Male, adults	...	52 hours per week	53 hours per week
(b) Females and Boys { per week per day	Girls under 18, boys under 16, 52 hours Girls under 18, boys under 16, 9½ hours (except 1 day, 11½ hours)	52 hours 9 hours (except 1 day, 12 hours)	Females and boys under 16, 52 hours Females and boys under 16, 9½ hours (except 1 day, 11½ hours)
Maximum continuously	All females: 5 hours	All persons: 5 hours	...
Interval	All females: ½ hour	All persons: ½ hour	...
Maximum Overtime { per day per year	... ...	3 hours 25 days	3 hours 40 days
General closing time	4 days, 6 p.m.; Fridays, 10 p.m.; Saturdays, 1 p.m.*	4 days, 6 p.m.; Saturdays, 1 p.m.; Fridays, 10 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; Saturdays (or other prescribed weekly holiday), 1 p.m.
Exemption from closing time	Certain shops	Businesses concerned with tobacco, bicycles, flowers, drugs and edibles, also hair- dressers and pawnbrokers	Certain exempted shops
Seats in Shops	1 to 3 females	1 to 3 assistants	1 to 3 females

* In the Metropolitan and Newcastle districts Saturday is the 1 o'clock closing day; in 56 country shopping districts and in 189 other districts Wednesday is the 1 o'clock and Saturday the 10 o'clock closing day.

8. **Mining Acts.**—Mining Acts regulate the working of mines. Generally the employment underground of all females and of boys under fourteen years is prohibited. A minimum age, usually seventeen, is fixed for employment as lander or bracman at plats and landing places; no lander, bracman, underground worker, or man in charge of motive power may be employed more than eight hours a day. A large number of scientific provisions for the protection of the lives and health of miners is also inserted in the Acts. Enginedrivers must hold certificates of competency. Persons may be licensed to certify to the condition of boilers. Provision is made to enable injured persons or the relatives of persons killed to recover damages if the injury or death results from a breach of the regulations referred to above. Inspection of mines is fully provided for. Sunday labour is forbidden. In New South Wales, and (since 1st February, 1910) Victoria still more advanced mining legislation exists; numerous sections are designed to ensure the well-being of the workers, such as limitation of hours, etc.

9. **Employers' Liability and Workmen's Compensation Acts.**—In each of the States the main provisions of the British *Employers' Liability Acts* have been enacted. Generally, they apply to all manual workers, though in Victoria miners, as coming under the Mines Acts, are excepted, and in South Australia and Western Australia domestic and menial workers are specifically included. The employers' liability exists in cases of defect of plant, etc., owing to negligence of employer or person in his service. Compensation is not allowed to exceed three years' earnings, and action against the employer is to be commenced within a reasonable time, notice of injury having previously been served. The provisions of the British *Workmen's Compensation Act 1897* have also been copied in all the States. The Victorian Act, which has not yet been proclaimed, makes insurance obligatory. This legislation marks a distinct advance upon

FEATURES OF ACTS IN FORCE IN AUSTRALIA, 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.
Early Closing, 1911 and 1912	Early Closing, 1902, 1904 (2), and 1911	Factories, 1910, 1911, with amendments Shops Closing 1911, with amendments
...	56 hours per week	...
Boys and girls under 16, 52 hours	Boys under 16 & all females, 52 hours	Females and boys under 16, 52 hours
Boys and girls under 16, 9 hours (except 11 hours on 1 day)	Boys under 16 & all females, 9 hours (except 10½ hours on 1 day)	Females and boys under 16, 9 hours (except 12 hours on 1 day)
...	One hour interval between noon and 3 p.m. If open after 6.30 p.m., 1 hour for tea	Females and boys under 16, 5 hours
...		Females and boys under 16, ½ hour
3 hours	3 hours	3 hours
40 days	12 days per half-year	40 days
4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m.	4 days, 6 p.m.; 1 day, 9 p.m.; 1 day, 1 p.m. (Opening hour not earlier than 8 a.m.)	4 days, 6 p.m.; 1 day, 10 p.m.; 1 day, 1 p.m.
Certain classes of shops	Shops such as hairdressers, newsagents, tobacconists, and those selling drugs and edibles	Shops registered as small shops, and certain shops such as tobacconists, newsagents and those selling edibles
...	...	1 to 3 females

the Employers' Liability Acts. Its application is generally to manual workers, though restriction is made in South Australia to those receiving less than £5 weekly, and in Tasmania the limit is £3, while miners are exempted from the operation of the Act in New South Wales, being provided for in the *Miners' Accident Relief Act 1900*. In Victoria non-manual workers earning more than £250 per annum are excluded. The liability of employers covers all cases of injury by accident during employment, and in South Australia and Victoria it extends also to disablement by industrial diseases. In certain circumstances persons employed casually otherwise than for the purposes of the employer's trade or business are excluded. Misconduct of employee exonerates the employer. Notice of accident is to be sent to the employer without delay, and proceedings for compensation must be begun within a reasonable time. In New South Wales, Queensland, and Western Australia the matter is settled by a police magistrate; in South Australia the Arbitration Court makes the award. The minimum amount of compensation in case of death is three years' earnings, or £200 (except in Tasmania, where the amount is £100, and South Australia, where it is £150), which—over is greater, up to a maximum of £300 in South Australia, £200 in Tasmania, and £400 in the other three States concerned. In case of incapacity the minimum compensation is half wages up to £1 a week in New South Wales, Queensland, and South Australia, up to £1 10s. in Tasmania and Victoria, and up to £2 in Western Australia; the maximum total payment is £500 in Victoria, £400 in Queensland, £300 in South Australia and Western Australia; and £200 in New South Wales and Tasmania. Agreements made by consent, may, under the authority of an official prescribed in the Act, vary its provisions. A lump sum may be accepted in lieu of weekly compensation, and compensation cannot be assigned. The main difference in the provisions of the two sets of enactments is that under the Liability Acts the employee had to show neglect or defect; under the Compensation Acts the employer has to shew misconduct of worker.

In Victoria, a penalty of £2 per uninsured worker and £1 per week thereafter is imposed for non-insurance. Insurance is to be effected in a recognised insurance office, or in the State Insurance Office, and any employer whose wage-roll for the previous twelve months did not exceed £160, shall be deemed to be insured with the Government Department, if the employer notifies the Commissioner within 14 days and obtains from him a policy of insurance as soon as practicable.

10. **Other Acts.**—Other legislation regulating conditions of labour has been enacted by the States. The British *Conspiracy and Protection of Property Act* (38 and 39 Vic., c. 86) has been adopted. Servants' registry offices are placed under administrative control, and the rates of commission chargeable are fixed by regulation. Power is given to workmen to attach moneys due to a contractor who employs them in order to satisfy a claim for wages, such wages being made a first charge on moneys due to a contractor. Workmen are given a lien for wages over material whereon they are working, even if it becomes part of other property. This is in addition to the common law lien, which ceases when possession of the property is parted with. Workmen's wages are protected from attachment. In Victoria, provision is made for the compulsory resumption of suburban lands to provide workmen's homes.

11. **General Results of Industrial Legislation.**—The results of the Legislation described must be sought in the Reports of the Inspectors of Factories of the several States. Generally speaking, the perusal of these reports and of the reports of Royal Commissions which have inquired into the working of the Acts, affords satisfactory evidence that the Acts have, on the whole, effected their objects.

§ 3. Legislative Regulation of Wages and Terms of Contract.

1. **General.**—Two systems, based upon different principles, exist in Australia for the regulation of wages and general terms of contracts of employment. A "Wages Board" system exists in Victoria and Tasmania, and an Industrial Arbitration Court in Western Australia. In the industrial legislation of New South Wales, Queensland, and South Australia both systems are embodied, Industrial or Wages Boards, as well as Industrial Courts, being instituted. In Victoria, Wages Boards' decisions may be reviewed by the Court of Industrial Appeals. In New South Wales, Industrial Arbitration Acts of 1901 and 1905 instituted an Arbitration Court. This court expired on 30th June, 1908, having delivered its last judgment on the previous day. Wages Boards were substituted under the Industrial Disputes Act 1908, and subsequent years; while the Act of 1912 introduced the mixed system. There is also the Arbitration Court of the Commonwealth, which has power, however, to deal only with matters extending beyond the limits of a single State.

The chief aims of the Wages Board system are to regulate hours, wages, and conditions of labour and employment, by the determination of a Board usually brought into existence for any specified industry or group of industries by petition or application. Under the Industrial Arbitration Court system an industry does not technically come under review until a dispute has actually arisen. Most of the Acts, however, have given the President of the Court power to summon a compulsory conference. In Victoria, where the Wages Board system is in force, there is no provision against strikes, but in Tasmania, where that system has also been adopted, penalties are provided for a lock-out or strike on account of any matter in respect of which a Board has made a determination.

2. **Wages Boards.**—(i.) *Historical.* This system was introduced in Victoria by the Factories and Shops Act of 1896. The original Bill made provision only for the regulation of the wages of women and children, but was afterwards amended in Parliament to extend the system to adult operatives of both sexes.

The Act of 1896 made provision for the regulation of wages only in the clothing and furniture trades and the bread-making and butchering trades. By an Act of 1900 the

operations of the Act were extended to include all persons employed either inside or outside a "factory" or "workroom"—see sec. 4, i. (a)—in any trade usually carried on therein. This section is now in the Act of 1912. The Act of 1907 extended the system to trades and businesses not connected in any way with factories, making provision for the appointment of Wages Boards for metropolitan shop employees, carters and drivers, persons employed in connection with buildings or quarrying, or the preparation of firewood for sale or the distribution of wood, coke, or coal. The Act of 1909 extended the system to the mining industry, and those of 1910 extended the operation of the Acts to shires.

The regulation is effected by a Board, called a Special Board, to distinguish it from the Board of Health. Boards for the regulation of wages in the trades specified in the Act of 1896 are appointed as a matter of course, and by the Executive other Boards are appointed only if a resolution for appointment be passed by both Houses of Parliament. Originally the Board was elected in the first instance, but the difficulty of compiling electoral rolls led to the adoption of the system of nomination, which has proved satisfactory. Beneficial results have followed from the institution of the system, conditions of female labour especially being improved. It is also claimed that sweating has been abolished.

The Board fixes the wages and hours of work and may limit the number of "improvers" to be employed (usually by prescribing so many to each journeyman employed). The Board fixes the wages of apprentices and improvers according to age, sex, and experience, and may fix a graduated scale of rates calculated on the same basis. Apprentices bound for less than three years are improvers, unless the Minister sanctions the shorter period of apprenticeship on account of previous experience in the trade. The Minister may sanction the employment of an improver over twenty-one years of age at a rate proportionate to his experience. Outworkers in the clothing trade must be paid piece rates. Manufacturers may, by leave of the Board, fix their own piece rates, if calculated upon the average wages of time workers as fixed by the Board.

Licenses for twelve months to work at a fixed rate lower than the minimum rate may be granted by the Chief Inspector of Factories to persons unable to obtain employment by reason of age, slowness, or infirmity. Licenses are renewable.

Penalties are fixed for the direct or indirect contravention of determinations, the obedience to which is ascertained by examination of the records of wages, etc.

A Court of Appeal has power to review determinations of the Boards.

The Acts fix an absolute weekly minimum wage, and the evasion of this provision (such as had occurred regarding females employed in the clothing trade), by charging an apprenticeship premium, is prevented by the prohibition of all such premiums. Until the Minimum Wage Act of 1908 began to operate, this absolute minimum provision did not exist in New South Wales. The Act of 1912 of this State combines the Wages Board and Arbitration Court systems.

South Australia enacted the Wages Board system in 1900, 1904, and 1906, but the first-mentioned Act was rendered inoperative owing to the disallowance by Parliament of the regulations necessary for carrying it into effect. The Act of 1904 revived the Wages Board system respecting women and children employed in clothing and white-work trades. The action of this statute was paralysed by a decision, the effect of which was to prevent the fixing of a graduated scale of wages as is done by the Victorian Boards. The necessity for some protection to the persons intended to be benefited by these statutes was urged in the annual reports of the Chief Inspector of Factories, but, until 1906, without effect. Many employers, however, voluntarily complied with the Board's determinations, though these were without legal force. The system was brought into full operation by the Act of 1906, which preceded the Victorian Act of 1907, in extending the system to other than factory trades, and was of a wider scope than the Victorian Act.

The system has also been in operation in New South Wales and Queensland, and came into operation in Tasmania during 1911. In Western Australia the object is attained under the Arbitration Court system.

In Queensland, the Wages Boards Acts were repealed in 1912, and replaced by the Industrial Peace Act, which, while embodying the principal provisions of the Wages Boards Acts, contains provisions for the establishment of an Industrial Court for appeals, and also provides against lockouts and strikes. Under this Act all Boards established under the repealed Acts continue in existence, and their determinations are recognised as awards under the new Act.

It is claimed that the introduction of the Wages Board system affording protection from unfair competition to employers, and the assurance of fair wages to employees, has led to improvement in working conditions, and that the appreciation of the workers is evidenced by the number of applications for the granting of Boards.

(ii.) *Mode of Constitution.* The following statement is taken from the Report of the Chief Inspector of Factories, Victoria, for 1911. The other States, in establishing their systems, adopted, in the main, that in vogue in Victoria.

"Before a Special Board is constituted, it is necessary that a resolution in favour of such a course should be carried in both Houses of the Legislature. It is usual for the Minister administering the Factories Act to move that such a resolution should be passed. He may be induced to adopt such a course by representations made either by employers or employees, or both, or by the reports of the officers of the Department. The reason alleged by employers for desiring a Board is usually unfair competition; those alleged by employees are low wages and the excessive employment of juvenile labour. If the Minister is satisfied that a case has been made out, he moves the necessary resolution in Parliament, and when such resolution has been carried, an Order-in-Council is passed constituting the Board. Once a resolution has been passed or a Board appointed, the Minister, through the Governor-in-Council, has full power to group or divide trades, to adjust the powers of different Boards by taking from one and adding to another, to define the parts of the State over which any determination shall operate, and generally to administer so as to secure the greatest measure of benefit. The Order constituting the Board indicates the number of members. The number of members must not be less than four nor more than ten. The Minister then invites, in the daily press, nominations for the requisite number of representatives of employers and employees. These representatives must be, or have been, employers or employees, as the case may be, actually engaged in the trade to be affected. The full names and addresses of persons willing to act should be sent in with particulars as to their connection with the trade during the three years last past. Where there are associations of employers or employees, more than the necessary number of nominations are often received. In such case, the Minister selects from the persons whose names are sent in, the necessary number to make up a full Board. The names of persons so nominated by the Minister are published in the *Government Gazette*, and unless within twenty-one days, one fifth of the employers, or one-fifth of the employees, as the case may be, forward a notice in writing to the Minister that they object to such nominations, the persons so nominated are appointed members of the Board by the Governor-in-Council. If one-fifth of the employers or employees object to the persons nominated by the Minister—and they must object to all the nominations, and not to individuals—an election is held. The Chief Inspector conducts such elections, the voting is by post, the ballot papers being forwarded to each elector. Within a few days of their appointment, the members are invited to meet in a room at the office of the Chief Inspector of Factories, and a person (always a Government officer, and usually an officer of the Chief Inspector's department) is appointed to act as secretary. The members must nominate a chairman within fourteen days of the date of their appointment, but if they cannot agree to a chairman, he is appointed by the Governor-in-Council. The times of meeting, the mode of carrying on business, and all procedure, are entirely in the hands of the Board, whose powers are defined in the Factories Acts. Vacancies in Special Boards are filled on the nomination of the Minister without any possibility of either employer or employee objecting. The result of the labours of a Board is called a 'Determination,' and each item of such determination must be carried by a majority of the Board. The chairman is a member of the Board. His function is.

usually confined to conducting the proceedings. He does not exercise his vote except in cases where the Board is equally divided, when his casting vote determines the question at issue. When a determination has been finally made, it must be signed by the chairman, and forwarded to the Minister of Labour. The Board fixes a date on which the determination should come into force, but this date cannot be within thirty days of the last fixing of a price or rate of pay. If the Minister is satisfied that the determination is in form, and can be enforced, it is duly gazetted. In the event of the Minister considering that any determination may cause injury to trade, or injustice in any way whatever, he may suspend same for any period, not exceeding six months, and the Board is then required to reconsider the determination. If the Board does not make any alteration, and is satisfied that the fears are groundless, the suspension may be removed by notice in the *Gazette*. Provision is made by which either employers or employees may appeal to the Court of Industrial Appeals against any determination of a Board. This Court consists of any one of the judges of the Supreme Court, sitting alone, and the judges arrange which of them shall for the time being constitute the Court. An appeal may be lodged (a) by a majority of the representatives of the employers on the Special Board; (b) a majority of the representatives of employees on the Special Board; (c) any employer or group of employers, who employ not less than 25 per cent. of the total number of workers in the trade to be affected; or, (d) 25 per cent. of the workers in any trade. The Court has all the powers of a Special Board, and may alter or amend the determination in any way it thinks fit. The decision of the Court is final, and cannot be altered by the Board, except with the permission of the Court, but the Court may, at any time, review its own decision. The Minister has power to refer any determination of a Board to the Court for its consideration, if he thinks fit, without appeal by either employer or employee. The decision of the Court is gazetted in the same way as the determination of the Board, and comes into force at any date the Court may fix. The determinations of the Board and the Court are enforced by the Factories and Shops Department, and severe penalties are provided for breaches of determinations. No prosecution for any offence against any of the Factories Acts, or for any breach of any determination can be brought except through the Department."

(iii.) *Special Minimum Wage Provisions.* At the end of 1908 the Minimum Wage Act was passed in New South Wales. Its provisions are now incorporated in the Factories and Shops Act 1912. A summary of the provisions of the enactment, and a statement of some of the ills it was intended to meet, as set out in the departmental reports, serve as an indication of the general trend of public feeling throughout the Commonwealth in regard to the payment of a satisfactory wage to employees. The Act provided for a weekly wage of not less than four shillings to all persons coming within the definition of "workman" or "shop assistant." That such a measure was necessary was evidenced by the fact that in the workrooms in the Sydney district no less than 514 girls, whose ages ranged from 13 to 21 years, were, at the end of 1908, in receipt of less than four shillings per week, and in the Newcastle district there were 272 girls employed in the dressmaking and millinery workrooms receiving less than four shillings a week, the majority being paid no wages at all for their services. The Act provided that for "workmen" or "shop assistants" a minimum rate of threepence per hour or portion of an hour was to be paid when overtime was worked, such payment to be made at intervals of not more than one month, and a sum of not less than sixpence as tea-money was to be paid on the day the overtime was worked. The payment by employees, or on their behalf, in the clothing and wearing apparel trades, of a premium or bonus was prohibited. The system of so-called apprenticeship without payment originally carried with it the recognition of an obligation to teach the trade, especially in the dressmaking and millinery industry. This aspect of the case had, to a very great extent, been forgotten in the large workrooms, the training received for some time being more that of general discipline than of a technical character. With a minimum wage of four shillings, an employer would find it worth while to teach the employees, so as to bring in a return for the outlay as speedily as possible, and

discharges of partially-trained workers would be less frequent. The trades would be improved by the weeding out of those who failed to show reasonable aptitude for their work.

3. The Arbitration Court System.—(i.) *Acts in Force.* The following is a general account of the main features of the Compulsory Arbitration laws of Australia. A few important divergencies between the Acts are noted.

The Acts in force in the States at the close of the year 1913 are set out on page 908 *supra*. In addition, the Commonwealth Statute Book contains the Commonwealth Conciliation and Arbitration Acts 1904-11.

(ii.) *Significance of Acts.* In Victoria in 1891, and in New South Wales in 1892, Acts were passed providing for the appointment of Boards of Conciliation, to which application might be made voluntarily by the contending parties. The awards of the Boards had not any binding force. Boards were applied for on but few occasions, their lack of power to enforce awards rendering them useless for the settlement of disputes.

The first Australian Act whereby one party could be summoned before, and, presumably, made subject as in proceedings of an ordinary court of law to the order of a court, was the South Australian Act of 1894. Its principles have been largely followed in other States, but it proved abortive in operation in its own State, and in many respects was superseded by the Wages Board system. Western Australia passed an Act in 1900, repealed and re-enacted with amendments in 1902 and 1909, the whole being consolidated in the Industrial Arbitration Act of 1912. The Court system was adopted in New South Wales in 1901, and various changes having been subsequently introduced, a consolidation was made in 1912. Queensland introduced the system under the Industrial Peace Act of 1912. The Commonwealth principal Act, passed in 1904, applies only to industrial disputes extending beyond the limits of a single State. In Western Australia a Court of Arbitration is constituted under the presidency of a Judge of the Supreme Court.

(iii.) *Industrial Unions.* The Arbitration Act, framed to encourage a system of collective bargaining, to facilitate applications to the court, and to assure to the worker such benefits as may be derived from organisation, virtually creates the Industrial Union. This, except in New South Wales and Western Australia, has been quite distinct from the trades union; it is not a voluntary association, but rather an organisation necessary for the administration of the law. The New South Wales Act of 1901 required all trade associations to register as "industrial unions," prescribing the separation of industrial and benefit funds, and enforcing strict and proper management, the industrial funds being available in payment of penalties incurred for breaches of the Arbitration Act. Industrial unions (or "organisations" as they are styled in the Commonwealth Act) may be formed by employers or employees. They must be registered, and must file annual returns of membership and funds. Before unions of employers are registered, there must be in their employment a minimum number of employees. In New South Wales and Western Australia the minimum is 50; under the Commonwealth Act, 100. Unions of employees must, in Western Australia, have a membership of 15; by the Commonwealth Act a membership of 100 is required. The union rules must contain provisions for the direction of business, and, in particular, for regulating the method of making applications or agreements authorised by the Acts. In Western Australia rules must be inserted prohibiting the election to the union of men who are not employers or workers in the trade, and the use of union funds for the support of strikes and lockouts; a rule must also be inserted requiring the unions to make use of the Act.

(iv.) *Industrial Agreements.* Employers and employees may settle disputes and conditions of labour by industrial agreements, which are registered and have the force of

awards. They are enforceable against the parties and such other organisations and persons as signify their intention to be bound by an agreement.

(v.) *Powers of Court.* Failing agreement, disputes are settled by reference to the court. In the Commonwealth this consists of a Judge of the High Court. The court may (and on the application of an original party to the dispute must) appoint two assessors at any stage of the dispute. In the States the president of the tribunal (usually a Judge of the Supreme Court) is assisted by members (the number varying under the various Acts) chosen by and appointed to represent the employers and employees respectively.

Cases are brought before the court either by employers or employees. The consent of a majority of a union voting at a specially summoned meeting is necessary to the institution of a case; the Commonwealth Act requires the certificate of the registrar that it is a proper case for consideration.

The powers of the court are both numerous and varied; it hears and makes awards upon all matters concerning employers and employees. The breadth of its jurisdiction may be gathered from the Commonwealth definition of "industrial matters," viz., "all matters relating to work, pay, wages, reward, hours, privileges, rights, or duties of employers or employees, or the mode, terms, and conditions of employment or non-employment; and in particular, but without limiting the general scope of this definition, the term includes all matters pertaining to the relations of employers and employees, and the employment, preferential employment, dismissal or non-employment of any particular persons, or of persons of any particular sex or age, or being or not being members of any organisation, association, or body; and any claim arising under an industrial agreement; and all questions of what is fair and right in relation to any industrial matter having regard to the interests of persons immediately concerned, and of society as a whole."

The object of the court is to endeavour to prevent and settle industrial disputes; and when they have occurred to reconcile the parties. The court may fix and enforce penalties for breaches of awards, restrain contraventions of the Acts, and exercise all the usual powers of a court of law. The High Court has declared that the power of the Commonwealth Arbitration Court to make a common rule, *i.e.*, an extension of award in a particular case to cover the whole industry affected by the proceedings, is *ultra vires* of the Constitution.¹

The Commonwealth court may prescribe a minimum rate of wage; it may also, as regards employment, direct that preference of employment or service shall be given to members of unions. An opportunity is offered for objection to a preference order, and the court must be satisfied that preference is desired by a majority of the persons affected by the award who have interests in common with the applicants.

The Commonwealth Court is to bring about an amicable agreement, if possible to conciliate and not to arbitrate, and such agreement may be made an award. In order to prevent a matter coming into dispute the president of the Commonwealth Arbitration Court may convene a compulsory conference under his own presidency. Attendance of persons summoned to attend is compulsory. Provision is made in the recent Act, whereby, if there is no settlement arrived at in the conference, the president may refer the matter to the court and then arbitrate on it.

There are four ways in which a matter may be brought before the court—

- (a) By the registrar certifying that it is a dispute proper to be dealt with by the court in the public interest.
- (b) By the parties, or one of them, submitting the dispute to the court by plaint in the prescribed manner.
- (c) By a State Industrial Authority, or the Governor-in-Council of a State in which there is no such authority, requesting the court to adjudicate.
- (d) By the president referring to the court a dispute as to which he has held a conference without an agreement being reached.

1. *The King v. The Commonwealth Court ex parte Whybrow.* (2 C.L.R., vol. 2, p. 1.)

All parties represented are bound by the award, and also all parties within the ambit of a common rule. The court possesses full powers for enforcement of awards.

States have included their railway and tramway employees, and also the employees of certain other public bodies under the Acts; the section of the Commonwealth Act giving the Commonwealth Court power over state employees has been declared unconstitutional by the High Court.¹

(vi.) *Repression of Strikes and Lockouts.* The first instance of a strike on a large scale in Australia occurred in 1890 and 1891, when the industrial upheavals assumed far-reaching proportions. As a result of differences between pastoralists and shearers, the labour unions called out the maritime workers. Industry was paralysed by the cessation of the sea-borne coal trade. Communications were held up, and commercial activity suspended. The chief results of the strike were indirect. It was seen that peaceful methods of adjusting disputes were more conducive to the welfare of the community generally, than the suicidal methods of strike and lockout. The unions therefore turned to legislation as an effectual means of improving labour conditions. It was hoped that open hostility to the economic system might be prevented by State regulation. A general desire was shewn for recognition of conciliation and arbitration, voluntary where possible, but compulsory through national tribunals and under legal authority, where necessary.

Accordingly, industrial legislation aims at preventing strikes and lockouts in relation to industrial disputes, other means of settlement being provided. Such is the declared object of the Commonwealth Acts. It is decreed that no person or organisation shall, on account of any industrial dispute, do anything in the nature of a strike or lockout, or continue any strike or lockout, under a penalty of £1000.

Strikes, however, have not altogether ceased, even in those States where legislation, by stringent enactment, forbids them. It has been noted that strikes of late have occurred chiefly amongst coal miners and certain unions representing unskilled labourers. The prohibiting clauses have not always been enforced by the Executive. But in several instances indictment has followed attempts to bring about or to prolong a strike, and fines and imprisonment have been awarded. A decision of the Arbitration Court, ordering the Newcastle coal trimmers to return to work, was upset by the Supreme Court of New South Wales, on the ground that the Arbitration Court had no power to make men work if they did not wish to do so.

(vii.) *Miscellaneous.* Protection is afforded to officers and members of unions against dismissal merely on account of such officership or membership, or on account of their being entitled to the benefit of an award.

It has been settled by the High Court that an Arbitration Court cannot direct—

- (a) That non-unionists seeking employment shall, as a condition of obtaining it, agree to join a union within a specified time after engagement;
- (b) That an employer requiring labour shall, *ceteris paribus*, notify the secretary of the employees' union of the labour required.²

4. **Comparative Statement of Tribunals for Regulating Wages in Australia.**—The table on pages 928 and 929 shews at a glance the Acts which operate in fixing wages, the constitution and function of tribunals enacted under them, and the effect and extent of the tribunals' decisions. It will be seen that in all the States there is machinery for the regulation of wages.

1. Federated Amalgamated Railway, etc., Employees v. N.S.W. Railway, etc., Employees. (4 C.L.R. 488).

2. Trolly, etc., Union of Sydney and Suburbs v. Master Carriers' Association of New South Wales. (2 C.L.R. 509.)

5. Movement Towards Uniformity.—The wide difference between the development in the several States of the Commonwealth of the regulation by State institutions of the remuneration and conditions of the workers, has given rise to a desire on the part of the Commonwealth Government to secure uniformity throughout Australia by any suitable and constitutional action on the part of the Commonwealth. The provisions of States wages laws vary considerably. In New South Wales, Victoria, and Western Australia, considerable experience has been gained of their working. The system is newer in South Australia, Queensland, and Tasmania. The desirability of uniformity has, as already mentioned, been recognised by the New South Wales Arbitration Court, which refused the Bootmakers' Union an award which would increase the wages of its members to amounts exceeding those paid in Victoria in the same trade, the express ground of the refusal being that New South Wales manufacturers would be handicapped by the payment of a higher rate of wage than that prevailing in Victoria.

6. Constitution Alteration Proposals.—Two proposed laws for the alteration of the constitutional powers of the Commonwealth in regard to industries and businesses were submitted to the people for acceptance or rejection on the 26th April, 1911. The first law proposed to amend section 51 of the Constitution Act (see pp. 24 and 25 hereinbefore) so as to give the Commonwealth Government increased powers to deal with (a) trade and commerce, (b) corporations, (c) industrial matters, and (d) trusts and monopolies. The second law proposed to insert after section 51 of the Constitution Act, a section empowering the Commonwealth Government to make laws with respect to monopolies. Neither of the proposals was approved by the people. Fuller particulars are given on page 24 of this book. At the general elections, held on 31st May, 1913, these and other matters were again submitted by referendum and again rejected.

7. The "New Protection."—The opinion has been expressed that a manufacturer who benefits by the Commonwealth protective tariff should charge a reasonable price for the goods which he manufactures, and should institute a fair and reasonable rate of wage and conditions of labour for his workmen.

The above view is known as the "New Protection," a phrase which, though novel, is already firmly established in Australian economic discussions. The outcome has been the enactment of new laws, designed for the benefit of the workers, and for controlling monopolies and trusts which would otherwise exploit the necessities of life.

By the Customs Tariff 1906, increased duties were imposed upon certain classes of agricultural machinery, notably the "stripper-harvester," a machine invented in Australia, which has, to a great extent, replaced the "reaper and binder and thrashing machine" in the harvesting of wheat. By the same Act it was enacted that the machines scheduled should not be sold at a higher cash price than was thereby fixed, and that if that price should be exceeded, the Commonwealth Executive should have power, by reducing the customs duties imposed by the Act, to withdraw the tariff protection.

By the Excise Tariff Act 1906 (No. 16 of 1906), an excise of one-half the duty payable upon imported agricultural machinery was imposed upon similar machinery manufactured in Australia. But it was provided that the latter should be exempt from excise if the manufacturer thereof complied with the following condition, namely, that the goods be manufactured under conditions as to the remuneration of labour, which—

- (a) Are declared by resolution of both Houses of the Commonwealth Parliament to be fair and reasonable ;
- (b) Are in accordance with the terms of an industrial award under the Commonwealth Conciliation and Arbitration Act 1904 ;
- (c) Are in accordance with the terms of an industrial agreement filed under the last-mentioned Act ;
- (d) Are, on an application made for the purpose to the President of the Court, declared to be fair and reasonable by him or by a judge of a State Court or a State industrial authority to whom he may refer the matter.

TRIBUNALS FOR THE REGULATION OF WAGES

Particulars.	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.
<i>Name of Acts</i>	Industrial Arbitration Act 1912	Factories and Shops Act 1912	Industrial Peace Act 1912
<i>Nature of Tribunals</i>	Court of Industrial Arbitration. Industrial Boards	Court of Industrial Appeals. Wages Boards	Industrial Court. Industrial Boards
<i>How Tribunals are brought into existence</i>	Industrial Court (Judge) constituted by Act. Industrial Boards by the Minister on recommendation of Industrial Court.	Court constituted by Acts. Wages Boards by Governor-in-Council on resolution of Parliament	Industrial Court constituted by the Act. Industrial Boards by Governor-in-Council on recommendation of Court
<i>Scope of Acts</i>	To industrial groups named in Schedule to Act, and those added by Proclamation. Includes Government servants	To any process, trade, business, or occupation specified in a resolution. Government servants are not included	To callings specified in Schedule to Act, and to those added by Governor-in-Council
<i>How a trade is brought under review</i>	Reference by Court or Minister, or by application to the Board by employers or employees	Usually by petition to Minister	By petitions and representations to Industrial Registrar
<i>President or Chairman of Tribunal</i>	Appointed by Minister on recommendation of Court.	Appointed by Governor-in-Council on nomination of Board, or failing that on nomination by Minister	Any person elected by Board. If none elected, appointment is by the Governor-in-Council on recommendation of Court
<i>No. of Members of Tribunal</i>	Chairman, and 2 or 4 other members	Not exceeding 11 (including chairman)	Not less than 5 nor more than 13 (including chairman)
<i>How ordinary members are appointed</i>	Appointed by Minister on recommendation of Industrial Court	Nominated by Minister. But if one-fifth of employers or employees object, representatives are elected by them	By employers and employees respectively
<i>Decisions — how enforced</i>	By Registrar and Industrial Magistrate	By Factories Department in Courts of Petty Sessions	By Inspectors of Factories and Shops, Department of Labour
<i>Duration of decision</i>	For period fixed by Tribunal, but not more than 3 years.	Until altered by Board or Court of Industrial Appeals	12 months and thereafter, until altered by Board or Court
<i>Appeal against decision</i>	To Industrial Court against decision of Boards, except those Boards presided over by a Judge	To the Court of Industrial Appeals	To Industrial Court
<i>If suspension of decision possible pending appeal</i>	No; except by temporary variation of award by the Court	Yes; for not more than 12 months	Yes; for not more than 3 months
<i>Can preference to unionists be declared?</i>	Yes	No	No
<i>Provision against strikes and lockouts</i>	Strikes, penalty £50 and preference to unionists cancelled. Lockouts, penalty £1000.	None	Strikes £50, lockouts £1000, unless notice of intention given to Registrar and secret ballot taken in favor. In the case of public utilities, compulsory conference also must have proved abortive
<i>Special provisions for Conciliation</i>	Special Commissioner. 3 Conciliation Committees for colliery districts. Registered agreements	None	Compulsory Conference. Registered Agreements

IN TRADES IN AUSTRALIA, 1913.

SOUTH AUSTRALIA.	WESTERN AUSTRALIA.	TASMANIA.	COMMONWEALTH.
The Factories Acts 1907, 1908, and 1910. Industrial Arbitration Act 1912	Industrial Arbitration Act 1912	Wages Boards Acts 1910 and 1911	Conciliation and Arbitration Act 1904-11.
Industrial Court. Wages Boards	Arbitration Court	Unlimited	Court of Conciliation and Arbitration.
Court constituted by Act of 1912. Wages Boards by the Governor-in-Council	Constituted by the Act	For the clothing trade, by the Act; for other trades, by a resolution of Parliament	Court of Record constituted by the Act
To processes, trades, &c., specified in Act, and such others as may be authorised by Parliament	All industrial occupations	All trades, or groups or parts thereof	Industrial disputes extending beyond limits of any one State or in Federal Capital or Northern Territories
Court—matters or disputes submitted by Minister, Registrar, employers or employees, or by report of Wages Board. Wages Boards by petitions, &c.	Industrial disputes referred by President or by an Industrial Union or Association	By application of parties	Industrial disputes either certified by Registrar, submitted by organisation, referred by a State Industrial authority or by President after holding abortive Compulsory Conference
Court—President. Wages Board, appointed by Governor on nomination of Board, or failing nomination a Stipendiary Magistrate	A Judge of the Supreme Court	Any person elected by the Board. If none elected, appointment by the Governor-in-Council	President
Court, President only. Wages Board, not less than 5 nor more than 11 (inclusive of chairman)	Three, including president	Chairman, and not less than four nor more than ten	President only
By Governor on nomination of employers and employees respectively	Appointed by Governor, President directly, and one each on recommendation of unions of employers and workers respectively	By Governor-in-Council on nomination by employers and employees	President appointed by Governor-General from Justices of High Court for a term of 7 years.
By Factories Department	By Arbitration Court on complaint of any party to the award or Registrar or an Industrial Inspector	By Department of Public Health	By proceedings instituted by Registrar, or by any organisation affected, or a member thereof
Until altered by Board or by order of Industrial Court	For period fixed by Court, not exceeding 3 years, or for 1 year and thenceforward from year to year until 30 days' notice given	Until altered by Board.	For period fixed by award not exceeding 5 years
Industrial Court	No appeal except against imprisonment or a fine exceeding £20	To Supreme Court	No appeal. Case may be stated by President for opinion of High Court
Yes	No suspension. Court has power to revise an award after the expiration of 12 months from its date	Yes	No appeal
No	No	No	Yes; ordinarily optional, but mandatory if in opinion of Court preference is necessary for maintenance of industrial peace or welfare of society
Penalty £500, or imprisonment 3 months	Employer or Industrial Union, £100; other cases, £10.	Organisations, £500; individuals, £20	Penalty, £1000.
Compulsory Conference. Industrial Court. Registered agreements	Compulsory Conference. Registered agreements	None	Compulsory Conference. Court may temporarily refer to Conciliation Committee, Registered agreements

By the Excise Tariff Act 1906 (No. 20 of 1906) excise duties are imposed in respect of spirits, and it is provided that if any distiller (i.) does not, after the Act has been passed a year, pay his employees a fair and reasonable rate of wages per week of forty-eight hours or (ii.) employs more than a due proportion of boys to men engaged in the industry, the Executive may on the advice of Parliament impose an additional duty of one shilling per gallon on spirits distilled by that distiller.

Exemptions have been claimed by the manufacturers of agricultural machinery in South Australia, New South Wales, Victoria, and Tasmania. These were granted in the two first-mentioned States in consequence of an agreement entered into between the employers and employees. In Victoria, "this whole controversial problem with its grave social and economic bearings" (to quote the words of the President of the Court) was discussed in a lengthy case upon the application for exemption by Victorian manufacturers, now widely known as the "Harvester Case," and in the report of that case may be found the legal interpretation of the Acts under consideration. The exemptions claimed were refused, and the court after discussing the meaning of the words "fair and reasonable" defined them by laying down what it considered to be a scale of fair and reasonable wages.

The High Court has pronounced that the legislation under these Excise Acts is unconstitutional as being an extension of Federal action beyond the powers granted, and a usurpation of the ground reserved to the States. It may be noted that the rejected measures were enacted with the consent of all parties in Parliament, having been placed upon the Statute Book whilst the Liberal party was in power, the Labour representatives strongly supporting the proposals.

8. **Bounties.**—The Bounties Act 1907, the Manufactures Encouragement Act 1908, and the Shale Oil Bounties Act 1910 make provision for the encouragement of certain Australian industries by the payment to producers of certain moneys allotted by the Act upon the production of the commodities specified. The Acts also provide for the refusal or reduction of a bounty, if the production of a commodity is not accompanied by the payment to the workers employed in that production of a fair and reasonable rate of wage. The amounts paid in bounties during 1912-13 were:—

COMMONWEALTH BOUNTIES PAID (EXCLUDING SUGAR), 1912-13.

Cotton.	Flax and Hemp.	Sisal Hemp.	Preserved Fish.	Tobacco Leaf.	Cotton Seed for Manufacture of Oil.*	Coffee, Raw.	Fruits, Dried.	Combed Wool or Tops Exported.	Iron Manufactures etc.†	Wire Netting.†	Kerosene.†	Refined Paraffin Wax.†	Total.
£ 95	£ 215	£ ...	£ 103	£ 215	£ 22	£ 125	£ 576	£ 13,061	£ 16,987	£ 1,110	£ 2,792	£ 967	£ 36,268

* Cotton seed oil, £13; linseed oil, £9. † Paid under the Manufactures Encouragement Act 1908.
‡ Paid under the Shale Oil Bounties Act 1910.

The provision of bounties for sugar-growers is dealt with on page 394 *supra*. The present operative Act is the Sugar Bounty Act 1910, in the terms of which the grower receives bounty according to his production of sugar-cane and beet grown by white labour. The bounties and expenses for the last eight years were:—

SUGAR BOUNTIES AND EXPENSES, 1905-6 to 1912-13.

Year.	1905-6.	1906-7.	1907-8.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£	£	£	£
Bounties ...	148,106	328,210	577,148	477,090	402,132	630,762*	543,503†	370,306‡
Expenses ...	6,603	7,706	7,474	6,616	5,645	6,862	†	†
Total ...	154,709	335,916	584,622	483,706	407,777	637,624	†	†

* Including sugar beet, £554.

† Including sugar beet, £2244.

‡ Not available.

§ Including sugar beet, £1667.

§ 4. Operations under the Wage-regulating Laws.

1. **Awards and Determinations of Industrial Tribunals.**—The grounds usually alleged by the employers in seeking awards or determinations are that their business is hampered by “unfair” competitors, who pay only a sweating wage; employees allege that they are sweated, or are entitled to an increase in their wages by reason of the prosperity of the trade in which they are engaged, or increase in the cost of living.

In New South Wales there were at 31st December, 1913, 207 Industrial Boards in existence. Awards of Boards and of the Court in force numbered 286, of which 65 were awards of the Industrial Court varying previous awards of Boards. It should be observed, that of these 286 awards there were 35 (under the Act of 1908) which had expired before the end of the year 1913, though they have been reviewed since that date by Boards under the 1912 Act. It is understood, however, that in the interim the wages, hours, and conditions of these awards were observed.

In Victoria there were at 31st December, 1913, 131 Wages Boards constituted, affecting about 150,000 employees. The number of determinations in force was 127. All the Boards authorised, with the exception of three, had met for the purpose of fixing wages, hours, etc.

The Court of Appeal in Victoria had heard twelve appeals from determinations of Wages Boards. In one case the decision was upheld; in ten cases decisions were reversed or amended: in one case the Board, unable to come to a determination, referred the matter to the Court, which exercised its power of fixing a proper wage where the average wage paid by employers did not afford a living wage. Of these decisions five were in force at 31st December, 1913, the others having been superseded by amended determinations. The Court also heard an appeal for a modification of its determination with respect to a trade, and decided to modify such determination by reducing the working hours and increasing the wages in certain cases.

The number of Wages Boards appointed in Queensland since the Acts came into force was, at 31st December, 1913, 74. The employees affected numbered upwards of 30,000. In 73 cases determinations were in force, but four had been varied on appeal to the Industrial Court. Under the Industrial Peace Act 1912, all Boards established continued in existence, and their determinations were recognised. In South Australia there were, at the end of 1913, 56 trades under Boards, with about 25,000 employees. Fifty-four determinations were in force, including six made by the Industrial Court, in lieu of Wages Boards, on the Minister for Industry reporting the inability to appoint Boards as authorised, or the failure of the constituted Boards to discharge the duties required under their appointment. In Western Australia awards have been made for 36 Industrial Unions, but only 18 remained in force at 31st December, 1913, 19 expired between 4th December, 1912, and the end of 1913, and had not been reviewed by the Court at the latter date. The Wages Board system was inaugurated in Tasmania in 1911. Up to 31st December, 1913, resolutions authorising the appointment of 23 Boards were carried in Parliament, and 19 Boards had made determinations. Two other Boards had commenced work, but had not issued their determinations, and two remained to be constituted. The number of Commonwealth Conciliation and Arbitration Court Awards in force at 31st December, 1913, was 17.

The following tabular statement gives particulars of operations under the various Acts up to the end of the year 1913:—

BOARDS AUTHORISED AND CONSTITUTED, AWARDS, DETERMINATIONS AND AGREEMENTS IN FORCE, 31st DECEMBER, 1913.

Particulars.	C'with.	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Total
1. Boards Authorised, Constituted, and in Force—								
Number of Boards authorised ...	...	216*	135	74	56	...	23	504
" " constituted ...	...	223*	132	74	51	...	21	501
" " dissolved or superseded† ...	...	16†	1†	...	...	...	...	17
" " in existence at end of 1913 ...	...	207*	131	74	51	...	21	484
2. Boards which have made Awards or Determinations—								
Number of Boards which had made or varied awards or determinations ...	...	123	123	74	48	...	19	387
" " which had not made any award or determination ...	...	84	8	...	3	...	2	97
3. Number of Awards and Determinations in Force—								
Number of awards and determinations of Boards in force ...	...	284†	122	69	48	...	21	544
" " of Court in force ...	17	2	5	4	6	18	...	52
4. Scope of State Awards and Determinations—								
Number applying to whole State ...	...	32	8	3	...	...	15	58
" " Metropolitan area only ...	...	79	...	28	53	13	1	174
" " Metropolitan and Country towns ...	...	49	105	1	...	1	5	161
" " Country areas ...	...	126	14	41	1	4	...	186
5. Number of Commonwealth Awards in Force in each State—	...	13	17	15	16	9	13	...
6. Industrial Agreements in Force ...	228	75	...	5	11	82	...	401
7. Number of Commonwealth Agreements in Force in each State ...	...	132	129	68	62	57	61	...

* Excluding two Special Demarcation Boards. † Boards constituted and subsequently dissolved or superseded. In New South Wales 16 Boards were dissolved owing to alteration in the sectional arrangement of industries and callings. In Victoria one Board was superseded by three Boards. ‡ Including 65 awards of Boards which were varied by awards of Court.

The total number of Boards authorised in the five States in which the Board system is in force was 504, the total number constituted being 501, of which 17 had been dissolved or superseded. The number of Boards in existence at the end of 1913 was accordingly 484, of which 387 had either made original awards or determinations or varied existing awards or determinations, and 97 had not made any award or determination. The difference between the number of Boards in existence and the number which had made awards or determinations, is accounted for mainly by the fact that in New South Wales a number of Boards constituted under the Act of 1912 had not made awards, owing to existing awards, made under the Act of 1908, being still in force. This is shewn in the following line (Number of Awards and Determinations in force) in which it may be seen that the total number in force (including awards made by the Commonwealth and Western Australian Arbitration Courts) was 596. In New South Wales, the number of awards in force includes 146 awards under the Act of 1908. This leaves 138 awards in force made by 123 Boards under the new Act. In explanation of the fact that the number of awards in force in this State under the new Act exceeds the number of Boards in existence, it may be mentioned that several of the Boards have made separate awards for different districts and branches of industry.

Of the total number of awards and determinations in force on the 31st December, 1913, 82 were the result of awards made by Industrial Courts (either in original or appellate jurisdiction), in addition to the 17 Commonwealth and 18 Western Australian awards.

The following four lines in the table shew the territorial scope of the State awards and determinations in force at the end of the year 1913. It will be seen that 58 apply to the whole of a State, 174 to one of the metropolitan areas, 161 to metropolitan and country towns, while the remaining 186 apply to country areas only.

Of the Commonwealth awards there are seven in connection with the shipping industry and the award affecting postal electricians, which apply to each of the six States. There are four awards which apply to five States, two which apply to four States, one to three States, and two to two States.

The total number of industrial agreements in force (including agreements under section 24 of the Commonwealth Conciliation and Arbitration Act, and under section 7 of the Queensland Industrial Peace Act) was 401. The last line of the table shews the number of Commonwealth agreements operating in each State. The total number of awards, determinations and agreements in force under the various Acts at the end of 1913 was 997, comprising 596 awards and determinations and 401 agreements.

The total number of individual awards and determinations which came into force during 1913 was 270 (264 State and 6 Commonwealth). The number of industrial agreements registered* during that year was 165 (56 State and 109 Commonwealth), making a total for the Commonwealth of 435 awards, determinations and agreements, affecting wages, hours, or other conditions, which came into force in 1913. This constitutes no less than 44 per cent. of the total number (997) of awards, determinations and agreements in force at the end of 1913.

2. Effect of Acts.—The question whether the operation of the Acts has bettered the monetary position of the operative may be answered in the affirmative. Starting from the lowest point, the provision of an absolute minimum wage per week has stopped one form of gross sweating. Another case is that of the "white-workers" and dressmakers; with these the lowest grade was the "outworkers," who were pieceworkers. In some branches of the Victorian trade, in 1897, the wages paid to outworkers for all classes of certain goods were only from one-third to one-half the wages paid in the factories for low-class production of the same line of stuff. By working very long hours the outworker could earn ten shillings per week. The average wage of females in the clothing trade in 1897 was ten shillings and tenpence per week; there were, however, in that year 4164 females receiving less than one pound per week, and their average was eight shillings and eightpence. It was almost a revolution when a minimum wage of sixteen shillings per week of forty-eight hours was fixed by the Board, when pieceworkers' rates were fixed to ensure a similar minimum, and when outworkers were placed on the level of pieceworkers. Many employers refused to continue to give out work and took the workers into the factories on time work. The Wages Boards have since fixed the minimum wage per week in the industries mentioned to be—dressmakers 21s. 6d., shirtworkers 22s. 6d., and underclothing makers 20s. As a result, it has been found by a special investigation made in November, 1912, in regard to wages in manufacturing industries, that the average wages for all female workers in Victoria engaged at dressmaking and millinery was 17s. 11d., and for shirtworkers, whiteworkers underclothing, etc., 19s. 1d.

* Including agreements under section 24 of the Commonwealth Conciliation and Arbitration Act and under section 7 of the Queensland Industrial Peace Act 1912.

SECTION XXVIII.

DEFENCE.

1. Military Defence.

1. **Development of State Military Systems.**—Prior to 1870, the main defence of Australia was entrusted to small garrisons of British troops quartered in the leading cities, whose primary purpose was to serve as a convict guard. From time to time, rumours of wars and of attacks upon Australia deemed imminent as a result of European entanglements, caused the raising of local companies and batteries, which were generally disbanded upon the cessation of hostilities or the quietening of the rumours. The first of such bodies was the "Loyal Association" formed in 1801 as a volunteer corps, on account of the Napoleonic wars, and at the express invitation of the Governor. Half a century later, and at other later dates, fear of Russian aggression drove the colonists to measures of self-defence. Efforts to permanently establish a defence force, however, failed until 1870. In that year, the withdrawal of the last Imperial regiment from Australia, and the sense of insecurity which the Continental wars had engendered, resulted in a definite basis for colonial defence being settled. Small detachments of permanent soldiery were established to act generally as a nucleus about which the citizen soldiery should be shaped, and, generally, to look after the forts and defence works, which had then begun to be erected. The system rested upon a volunteer basis, training and service being freely and enthusiastically given by the citizens, the Governments supplying arms and accoutrements and sometimes uniforms. Reward for five years' service frequently took the shape of grants of land. About 1880, Imperial experts advised the substitution of the purely volunteer system by a "militia" or partially-paid system. The provision of a small annual allowance, generally £10 or £12 per annum for the gunner or private, with a sliding scale for higher ranks, together with arms, accoutrements, ammunition, and all military necessaries free, enabled the "militia" system to be introduced about 1883-4. The expenditure was thereby increased, but it was held that the efficiency was enormously greater. With reductions in the rates of pay the system has remained to the present day. "Volunteer" corps have again been raised, and the "permanent" forces from time to time augmented. A detailed historical account of the Australian defence forces prior to federation will be found in the Commonwealth Year Book, No. 2, pp. 1075-1080.

The strength of the military forces of the several States prior to federation, was generally nearly up to establishments. On 31st December, 1900 (the eve of federation), it was:—New South Wales, 9338; Victoria, 6335; Queensland, 4028; South Australia, 2932; Western Australia, 2696; Tasmania, 2024: total for Commonwealth, 27,353. Cadets, reservists, and rifle club members are excluded.

2. **Development of Commonwealth System from 1901 to 1913.**—(i.) *Administration.* Under the terms of the Constitution Act 1900, the Commonwealth took over control of defence matters in March, 1901. For four years from that date the land forces were administered by a general officer commanding, under the ministerial headship of the Minister for Defence. Early in 1905, a Council of Defence (since enlarged) was constituted to deal with questions of policy; also a Military Board, to supervise the administration of the forces. The principal aims in view were:—(i.) continuity of policy and administrative methods; (ii.) effectual parliamentary responsibility; (iii.) continuous inspection by an independent officer, the Inspector-General; (iv.) development of an

efficient citizen force : (v.) decentralization of authority by developing the independence of district commands. The Commonwealth has been divided into six military districts, roughly continuous with boundaries of the States.

The citizen soldiery, or militia, makes up the main portion of the land forces of the Commonwealth. For administration at central and district headquarters, and for instruction of the citizen forces, and assistance in the administration of units, an administrative and instructional staff of professional soldiers, numbering 598, exists. Other permanent troops are the regiment of Royal Australian Garrison Artillery, which provides the garrison (with citizen troops as reliefs) for strategic positions and defended ports, and maintains the forts and armament in connection with them; three batteries of Royal Australian Field Artillery; the Royal Australian Engineers; and small detachments of Army Service, Medical, Veterinary and Ordnance Corps. These form a nucleus, each in its own arm, for instruction and administration of the citizen forces. In addition to the active forces, officers who have retired after having passed through a course of training, and members of rifle clubs, who each year fire a prescribed musketry course, are classed as reserves.

The mobile field force, which absorbs the great bulk of the citizen army, consists of six light horse brigades, five field artillery brigades and six unallotted field batteries, and twelve infantry brigades. The garrison troops find the necessary garrisons for the defended ports. Fuller particulars regarding administration and organization will be found in Official Year Book No. 6, page 1046.

(ii.) *Strength of Military Forces under the Federation.* The position of the military forces under the Commonwealth is shewn in the following table:—

STRENGTH OF MILITARY FORCES, 1901 to 1913.

District.	1901. *1/3/01.	1909. 30/6/09.	1910. 30/6/10.	1911. 30/6/11.	1912. 30/6/12.	1913. 30/6/13.
Headquarters	...	30	37	†141	†140	†277
1st Queensland	4,310	3,224	3,202	3,371	3,357	4,625
2nd New South Wales	9,772	7,902	7,899	8,206	8,163	12,105
3rd Victoria	7,011	6,669	6,876	6,905	6,896	10,840
4th South Australia	2,956	2,004	2,019	1,990	1,869	3,228
5th Western Australia	2,283	1,662	1,608	1,600	1,451	1,685
6th Tasmania	2,554	1,870	1,868	1,986	1,820	1,777
Total	28,886	23,361	23,509	24,199	23,696	34,537

* Date of Commonwealth taking over the military forces from States. † Including cadets at Royal Military College of Australia, Duntroon.

(iii.) *Strength of the Various Arms.* The numbers of the different arms of the service on the 30th June, 1913, were as follows:—

ARMS OF THE COMMONWEALTH DEFENCE, 1913.

Light Horse	6,401	Automobile Corps...	29	Administrative and	
Field Artillery	2,167	Army Nurs'g Service	99	Instructional Staff	818
Garrison Artillery	1,893	Army Vet'ry. Corps	25	Pay Department,	
Engineers	1,657	Ordnance Departm't		Rifle Ranges, Rifle	
Infantry	18,827	(including Arma-	266	Clubs, Officers, etc.	98
Intelligence Corps	69	ment Artificers) ...		Royal Military College	149
Army Service Corps	664	Area Officers ...	215		
Army Medical Corps	1,160			Grand Total ...	34,537

(iv.) *The Cadet System.* Many years before the consummation of Australian Federation the systematic military training of lads had been instituted in the schools of the colonies, and the cadet system had attained considerable development. The Commonwealth Government made arrangements with the various State Departments of Education for boys attending school to be afforded facilities for drill by their teachers, and regular instruction by the Cadet Instructional Staff of the military forces. The cadet strength has increased rapidly under the Commonwealth defence system, and especially under the new compulsory scheme. Senior cadet battalions, for boys having left school, formed a connecting link between the schoolboy soldiers and the citizen forces. Mounted cadet corps were also formed in various parts of the Commonwealth, the members supplying their own mounts and horse-gear, and being trained in troop and squadron drill by instructors appointed for that purpose. Enrolment in Cadet Corps was voluntary and without pay, and the organisation was distinct from the educational establishments, but under similar conditions as regards drill and discipline. The voluntary system came to an end on 30th June, 1911.

The strength of the Commonwealth cadets, school, senior, and mounted, in the various States was, on 30th June, 1911, as follows:—New South Wales, 11,066; Victoria, 4447; Queensland, 5129; South Australia, 2886; Western Australia, 2847; Tasmania, 1648; Commonwealth, 28,023.

Naval cadets were also organised under the Defence Act. These numbered 748 on 30th June, 1911. Generally, the instruction, given by instructors of the naval forces, aimed at embracing all branches of a seaman's training.

(v.) *Classification of Land Forces.* The following table shews the classification and strength of the land forces in each State, including rifle clubs and cadets, on the 30th June, 1913:—

CLASSIFICATION OF LAND FORCES, 1913.

Branch of Service.	Head-quarters	1st Military District.	2nd Military District.	3rd Military District.	4th Military District.	5th Military District.	6th Military District.	Total.
Permanently employed ...	274*	429	606	751	172	907	135	2,774
Citizen Soldiers ...	...	4,135	11,183	9,984	3,009	1,443	1,615	31,369
Engineers and Railway Staff Corps ...	3	10	10	10	5	8	5	51
Army Nursing Service ...	...	14	26	23	16	12	8	99
Automobile Corps ...	...	6	8	9	8	...	3	29
Area Officers ...	...	31	72	63	23	15	11	215
Rifle Clubs ...	...	9,705	13,408	15,621	5,408	3,809	1,629	49,580
Senior Cadets ...	...	12,111	32,496	28,028	8,849	4,286	2,938	88,708
Unattached List of Officers ...	...	36	72	82	29	27	22	268
Reserve of Officers ...	...	201	238	280	71	63	61	914
Chaplains ...	...	33	45	55	7	25	11	176
Grand Total ...	277	26,711	58,364	54,906	17,592	9,895	6,438	174,183

* Including cadets at Royal Military College of Australia, Duntroon.

(vi.) *Instruction and Exchange of Officers.* Officers of the permanent forces are exchanged with officers in Great Britain, India, Canada, and New Zealand. Officers and non-commissioned officers are also sent to England for instruction. In 1911 two officers and four non-commissioned officers, in 1912 two officers and two non-commissioned officers, and in 1913 three officers and two non-commissioned officers of the permanent forces, were sent. In addition, five officers of the militia forces were sent to India for instruction in 1911, five in 1912, and five in 1913.

3. **The Present System.**—The defence of Australia at the present time is enacted and prescribed by the Defence Acts 1903-12 of the Federal Parliament. The provisions of the Acts of 1903 and 1904 and the regulations under them contain the main working principles of Australian defence, the necessary expansion being provided for in the amendments of 1909, 1910, 1911, and 1912, which also enacted the system of compulsory training. The main provisions of the Acts will be found in Official Year Book No. 6, pp. 1050 *et seq.* The principal provision of the Act of 1909 is the enactment of compulsory military or naval training, with regulations for registration, enrolment, and exemption. Statutes were passed subsequently, extending or modifying the legislative provisions, removing obstacles and difficulties, and, where necessary, providing machinery.

(i.) *Peculiar Position of Australia.* The Acts of 1909 and later years were the direct outcome of the feeling existing in a large majority of the citizens of the community, that Australia was insecure under the voluntary system. Recently, a Minister of State for Defence referred to the fact that if on a map of the world all the countries stained with blood were to be marked, Australia would be the only white spot. It is the national policy to effect a guarantee, by thorough preparation for war, that this exemption shall continue.

(ii.) *Compulsory Training.* By the Defence Acts of 1903 and 1904 all male inhabitants of Australia between the ages of 18 and 60 years were made liable to serve in the defence forces *in time of war*. The recent Acts make training and service compulsory *in time of peace*. By the Act of 1909 the principle of universal liability to be trained was made law for the first time in any English-speaking community. By the Act of 1910, which came into operation on 1st January, 1911, by proclamation, compulsory training was established. All male inhabitants of Australia, who are British subjects, and have resided in the Commonwealth for six months, are liable to serve. Exemptions (see *infra*, p. 939), exist for certain individuals and classes of people; and may be granted in the case of unpopulated and sparsely populated areas. The training is as follows:—

- (a) From 12 to 14 years of age, in the junior cadets.
- (b) From 14 to 18 years of age, in the senior cadets.
- (c) From 18 to 26 years of age, in the citizen forces.

(iii.) *Military Population.* In connection with the numbers available the figures of male population are of interest. The total number at cadet age, *i.e.*, between 12 and 18, at the Census of 1911 (3rd April) was about 260,000; at citizen soldier age, *i.e.*, between 18 and 26, 366,000; these latter, with 330,000 at ages between 26 and 35, give 696,000 as the total males at the best period for military service. In addition, there were about 614,000 between 35 and 60.

(iv.) *Record for Anthropometric Purposes.* In connection with the medical inspection, it has been arranged that the colour and character of hair, and the colour of eyes of those examined, shall be recorded for statistical purposes. Instructions have been compiled by the Commonwealth Statistician, in accordance with which the area officers classify the hair-colour under four divisions, comprising three types of fair, two of reddish, three of brown, and two of black. The character of the hair is recorded also in four divisions, *viz.*: (a) perfectly straight and smooth; (b) wavy and curly; (c) frizzy; (d) woolly. Intermediate types are classed under the heading to which they approach most nearly. The eye-colour is classified under four divisions, comprising sixteen types, *viz.*, four of greyish, four of bluish, four of yellowish, and four of brown and hazel.

A systematic record of height, weight and chest measurement of each trainee is also made.

It is possible that later the recommendations of the British Anthropometric Committee will be adopted.

The object of the investigation is to study the development of the Australian nation, the necessary statistic for military identification purposes affording a unique opportunity. A possibility exists of co-ordinating anthropometric work in the schools with that done in connection with compulsory military service.

(v.) *The Land Army.* The Act of 1909 prescribed Junior cadet training for lads 12 and 13 years of age, followed by Senior cadet training for lads from 14 to 18 years of age, thereafter Adult training for two years in the citizen forces, equal to sixteen days annually (eight in camp), followed by registration or one muster parade each year for six years. The existing citizen forces were continued. Arrangements for registration, enrolment, inspection, and medical examination of all persons liable to be trained were made. Some modifications were introduced by the Acts of 1910, 1911 and 1912, the principal change being extension of adult service to eight years. The existing militia (voluntarily enlisted) are free to remain until completion of their term of service. Only officers and non-commissioned officers may re-engage. All members of the forces must conform to the new system.

(vi.) *Visit and Report of Viscount Kitchener.* Before the Act came into operation, viz., at the end of 1909, Field-Marshal Lord Kitchener visited Australia at the invitation of the Government, and after inspecting the military forces at work at camps held at various places throughout the Commonwealth, and the forts and defence works erected or in course of erection, reported upon the whole scheme of land defence. His recommendations (with the exception of some confidential matters) were made public in the form of a memorandum in February, 1910. A scheme was propounded, its main principles being in conformity with the Defence Acts 1903-9. The trend and purport of the published report are given in the Commonwealth Year Book, No. 4, pp. 1085-1088. The adoption of some of Lord Kitchener's recommendations necessitated further amending Acts. The proposed organisation is based upon necessary considerations of (a) the numbers available; (b) the length of service demanded; (c) the proportion of the various arms required. It differs in some of its details from the scheme propounded by Lord Kitchener and includes—

28 regiments of light horse;
56 batteries of field artillery;
92 battalions of infantry;

and a due proportion of engineers, army service, and army medical corps, troops for forts, and other services.

(vii.) *Junior Cadets.* Junior cadet training, lasting for two years, consists of 90 hours each year, and begins on the 1st July in the year in which the trainee reaches the age of 12 years. No registration is made, but when the cadet presents himself for registration in the senior cadets in the year in which he attains the age of 14 years, he is required to shew that he has completed the necessary training in his 13th and 14th years. This training is aimed at developing the cadet's physique. It consists principally of physical training for at least 15 minutes on each schoolday, and elementary marching drill. The following subjects are also taught, viz.:—Miniature rifle shooting; swimming; running exercises in organized games; first aid; and (in schools in naval training areas) mariners' compass and elementary signalling. The junior cadets are not organized as military bodies, and do not wear uniform. The Commonwealth Government maintains a staff of special instructors of physical training, by whom classes are held for school teachers in all districts throughout the Commonwealth. The school teachers, in turn, impart the lessons to the boys. The Inspectors of Schools supervise the training, and inspect the cadets on behalf of the Defence Department. The instructors of physical training are also employed in the training of women teachers; but the instruction of girl scholars rests wholly with the States' Education Departments.

(viii.) *Senior Cadets.* Senior cadet training, lasting for four years, begins on the 1st July of the year in which the trainee reaches the age of 14 years. It consists of 40 drills each year, of which four are classed as whole days of not less than four hours, 12 as half-days of not less than two hours, the remainder being night drills of not less than one hour. To meet special cases (including extremity of weather), modifications and substitutions are permitted, but the minimum efficient service required of senior cadets is invariably 64 hours per annum. Registration of every male born in 1894 or subsequently, and who has resided for six months in the Commonwealth, must be effected in the first two months of the calendar year in which he completes his 14th year. The four years' training covers the foundation work necessary for service in any arm. It comprises marching, handling of arms, musketry, physical drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Discipline is strongly inculcated. Senior cadets are not required to attend camp.

Schools containing at least 60 senior cadets may form separate units, and may arrange their parades to suit school time tables, but battalion parades must be attended.

(ix.) *Citizen Forces.* Training in the citizen forces, lasting for eight years, begins on 1st July of the year in which the soldier reaches the age of 18 years. Except in the last year of this service (when only one registration muster parade is necessary in normal peace time) the work consists of continuous training in camp for 17 days in the case of the naval forces, artillery, and engineer arms, and eight days for other arms, and eight days (or equivalent) home training for all arms. The total service is thus 25 days per annum for the specialist and technical corps, and 16 days per annum for other corps, the main body of whom are light horse and infantry (see table on p. 942 *infra*). The home training (total eight days) is divided into whole days, half-days, and nights, the respective minimum duration of these being six, three, and one and a-half hours; two half-days or four nights counting as one whole day.

(x.) *Allotment to Arms.* Trainees to the number required are first allotted to the naval forces. There is no allotment during senior cadet training to particular branches of the military service. Upon transfer to the citizen soldiery, cadets with special educational or technical qualifications are drafted as recruits to one or other of the specialist or departmental corps to the required number; the bulk go to infantry. All other arms, except light horse, are maintained by annual quotas transferred from the senior cadets, as laid down in annual establishments. In the light horse, enrolment is not compulsory, since each recruit is required to provide his own horse; and, while every encouragement is given to eligible trainees to enrol, voluntary enlistment by those not liable for compulsory service is continued for the present.

Persons who are forbidden by the doctrines of their religion to bear arms are, as far as possible, allotted to non-combatant duties, as stretcher-bearers in infantry companies, or as members of the Army Medical Corps.

(xi.) *Exemptions.* Status, condition, employment, or place of abode, may exempt from service. In time of war the exemptions are as follows:—Aliens and non-Europeans; persons certified as medically unfit; members and officers of Commonwealth and State parliaments; judges and police magistrates; clergymen and theological students; police and prison officials; lighthouse-keepers; medical practitioners and nurses in public hospitals; and persons having conscientious objections to bear arms. Medical practitioners, non-Europeans, and conscientious objectors are not exempt from non-combatant duties.

In time of peace the exemptions are:—Persons certified as medically unfit; aliens; non-Europeans (exempt from combatant duties only); school-teachers qualified as instructors of drill; members of the permanent naval or military forces. Theological students may be exempted from training. To meet the case of districts where the

population is sparse and scattered, and where undue hardship would otherwise result, exemptions from training in time of peace may be extended by proclamation.

Burden of proving exemption rests upon the person claiming it, a final appeal lying to the civil courts. Any person convicted by a court of a disgraceful or infamous crime, or who is of notoriously bad character, is permanently disqualified.

(xii.) *Penalties for Prevention or Evasion.* Employers, parents and guardians may not, under a heavy penalty, prevent or attempt to prevent any employee, son, or ward, who is a trainee, from rendering service; nor may any employer penalize or prejudice any employee in his employment, or attempt to do so, because of the latter's service or liability for service; but the employer is not compelled to pay the trainee's wages for the time he is away from work.

A heavy penalty is enacted for evasion of service as required under the Act by those liable to serve. Penalties take the form of a money fine, or detention in military custody under enforced training and discipline. Non-efficients must attend additional training for each year they are non-efficient. Evasion renders the person evading or failing to serve ineligible for employment of any kind in the Commonwealth Public Service.

Children's courts are used where possible for the prosecution of cadets under the age of 16 years.

(xiii.) *Efficiency.* Each trainee must be efficient in each year. Parades, as ordered, must be attended, and a standard of efficiency, based on the number of years' training and the work performed, must be attained.

Parades are classed as compulsory, alternative, and voluntary. The former make up the exact amount of training required (25 days per annum for technical arms, 16 days for others), and may not be missed without leave formally given. Alternative drills are appointed for those absent with leave from compulsory parades, and are allowed to count for pay and efficiency. Voluntary parades are held for those desiring further proficiency, and for candidates for promotion. Any trainee failing to qualify as efficient in any year must do an extra year's training for each failure. Thus, there must be 12 annual entries of efficiency or exemption in each soldier's record before he receives his discharge.

(xiv.) *Pay.* In addition to the remuneration of professional soldiers, pay is provided for all members of the militia. Citizen soldiers who voluntarily enlisted under the old system receive the same rates of pay as formerly, the basis being 8s. per day for gunner, sapper, or private. Trainees under the compulsory system receive 3s. per day during the first year, and 4s. per day during the subsequent years of their training. Higher ranks are paid higher rates. For corporals the daily pay is 9s., for sergeants 10s., for sergeants-major 10s. 6d. and 11s. Light horse trainees receive in addition £4 per annum for keep of horse. In the commissioned ranks the daily rates of pay are 15s. for lieutenants, 22s. 6d. for captains, 30s. for majors, 37s. 6d. for lieutenant-colonels, and 45s. for colonels. Mounted officers also receive horse allowance.

(xv.) *Uniform and Equipment.* The uniform is simple and inexpensive, but suitable. It is free, and the principal articles are issuable every second year. The clothing is of universal pattern, and, beyond distinguishing corps' badges and a colored hat-band, there is no distinction (except rank marks). Uniform is worn on all parades and drills, but its wearing is forbidden when not on military duty. Except in the case of the younger cadets, rifles and free ammunition are provided. Citizen soldiers have their rifles on issue, but arms for senior cadets are stored in local depôts, and are issued as required for drill and musketry. An allowance of free ammunition is made to

commanders of units to encourage rifle shooting. The uniform issued to each citizen soldier is such as to enable him to parade (upon notice) with two woollen shirts, two pair breeches, hat, sleeping cap, puttees or leggings, military boots, and kit bag.

The task of fully equipping the rapidly expanding Australian Army has been undertaken. Technical stores have been indented; but the Commonwealth itself has supplied a large part of its army's furnishings. Four factories have been established by the Commonwealth Government, in which are manufactured woollen cloth, small arms, cordite, and harness and saddlery. A remount dépôt has also been instituted.

(xvi.) *Reserves.—Rifle Clubs.* No new reserves are created under the recent Acts. The present reserves consist of (a) officers, etc., retired from active service; (b) members of rifle clubs. The reserve of officers numbered 914 on 30th June, 1913. It consists of officers who have been fully trained, and are still capable of serving, but who, being unable to continue on the active list through business engagements, removal to rural districts and such like causes, have joined the reserve. There are 1133 rifle clubs in the Commonwealth with a membership of 47,565. An annual course of musketry is fired by these members, but they do not undergo any systematic drill. It is estimated that 60 per cent. of the members are fit for active service. Of these, 19,671 are allotted to citizen units and cable guards on mobilization to make these units up to war strength. The remainder (nearly 9000) are available for future allotment to units. Rifle clubs have been established in connection with many of the citizen units, thus encouraging the citizen soldiery to enhance its shooting efficiency by practice outside the compulsory drill and musketry. These clubs are well supported. Commonwealth teams competing at the British Rifle Association's meetings have been very successful.

(xvii.) *Number under Training.* The male population of Australia of military age gives about 177,000 between 14 and 18 years, and about 321,000 between 18 and 25 years. The estimated medical rejections (based upon the experience of European countries) will probably be 10 per cent. for senior cadets, and from 30 to 35 per cent. for citizen soldiers. To these must be added persons in exempt areas. The number under training, when the system is in full operation, is estimated at 90,000 senior cadets, and 113,000 citizen soldiers, the latter made up of 80,000 trained soldiers, 18,000 recruits, and 15,000 of the 25-26 year men. The future citizen force is planned to comprise 120,000 of all ranks, including about 5000 citizen officers and 8000 non-commissioned officers. Promotion will be absolutely by merit, the principle adopted being that *the best soldiers must lead, whatever their civil avocation or birth.*

(xviii.) *Allotment of Units to Divisional, Brigade, Battalion, and Training Areas.* The organization is territorial, and the divisions based upon infantry units. There are 92 battalion areas, forming 23 brigades. The areas are approximately equal in number of males of citizen soldier age (about 1300), and each furnishes a battalion of infantry, and a proportion of other troops. For administrative purposes, areas are subdivided into two or three training districts. Three brigades will form a division. Two brigade areas will each provide four battalions of infantry, one field artillery brigade (with proportion of divisional ammunition column), one field company of engineers, one company army service corps, and one field ambulance. The other brigade of the division provides four battalions of infantry, two squadrons of divisional light horse, one howitzer brigade, one divisional signal company of engineers, one company army service corps, and one field ambulance. Light horse and field artillery units for light horse brigades will also be furnished by some of the areas. *Personnel* for garrison artillery and submarine and electric engineers for garrison forces will eventually be supplied in the areas nearest to such localities. The average annual contingent of recruits will be about 155 for each battalion area, plus such additions as are required for light horse and field artillery units

raised therein. The figures shewn in the following tables are approximate, and include the recruits (18-19 year), but not the 25-26 year men.

ULTIMATE ALLOTMENT OF UNITS TO BRIGADE, BATTALION, AND TRAINING AREAS.

State.	Brigade Areas.	Battalion Areas.							Training Areas.
	No.	No. of Battalions.	Providing the undermentioned units.					Total Nos. in Training in Areas.	No.
			Infantry and Proportion of Engineers, A.S.C. and A.M.C.	Light Horse.		Field Artillery.			
				Squadrons.	Nos.	Batteries.	Nos.		
—	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
N. S. Wales ...	8	33	32,901	40	4,490	20	3,220	40,611*	75
Victoria ...	7	29	28,913	36	4,041	19	3,059	36,013†	65
Queensland ...	3	11	10,967	16	1,796	7	1,127	13,890‡	28
S. Australia ...	2	9	8,973	12	1,347	5	805	11,125§	24
W. Australia	2	6	6,979	4	449	3	483	7,911||	20
Tasmania ...	1	4	3,988	4	449	2	322	4,759¶	12
Totals ...	23	92	92,721	112 28 Rgts.	12,573	56	9,016	114,309**	224

* Also 766 for forts. † Also 327 artillery and 227 engineers at Geelong and Queenscliff for forts. ‡ Also 79 garrison artillery and 13 engineers for Lytton. § Also 86 artillery for forts. || Also 156 artillery and 32 engineers for forts. ¶ Also 86 artillery and 32 engineers for forts. ** Also 1804 for forts.

(xix.) *Instructional Staff.* The instructors provided for training consist of 115 officers and 483 warrant and non-commissioned officers of the instructional staff (permanent), and 215 area officers (temporary). They supervise the training of light horse, infantry, and senior cadet units, and instruct in the non-technical duties of specialist corps. Additional officers and non-commissioned officers in the permanent troops instruct in technical work.

The officers of the instructional staff act as Brigade-Majors, and as such, represent the Commandant in the brigade area. They are responsible for the instruction of officers of the existing citizen forces, conduct local schools of instruction, supervise and instruct the area officers, and allot the non-commissioned officers of their detail to various duties. Assistant Brigade-Majors are also furnished from the instructional staff. The duties of area officers vary both in nature and extent, and comprise registration and organisation of those to be compulsorily trained, clothing, arming, equipping and training the new senior cadets.

The staff instructors (warrant and non-commissioned officers) assist in carrying out the administrative work of their areas or units, and instruct cadets and recruits in light horse and infantry drill.

(xx.) *Higher Training.* The principal institution for the higher training of officers is the Royal Military College, Duntroon, Canberra. It contains barracks for 150 cadets, classrooms, well-equipped physical and chemical laboratories, library, riding school, etc. A gymnasium is being erected. Quarters have been provided for the staff. It is intended that the commissioned ranks of all arms of the permanent forces will be filled by

graduates of the college. Ten candidates per annum from New Zealand are entered and trained on behalf of the Dominion Government, which pays £200 per annum for each. Entrance is by open competitive examination. In February, 1911, the first examinations were held, and lectures and studies commenced at the college in the same year, the formal opening ceremony taking place in June, 1911. There were then 41 cadets at the college, 10 being from New Zealand. In April, 1914, the administrative staff numbered four (three military and one civil). One medical officer and two chaplains are attached; there are also 11 military officers doing duty as directors and instructors, and eight civil professors and lecturers. The strength of cadets was 112, of whom 17 came from New Zealand. There were also 49 horses belonging to the college, for mounted work, driving, etc. The full establishment of cadets is 150. No fees are charged for maintenance and instruction, and each cadet receives 5s. 6d. per day to meet expenses of uniform, books, instruments, etc. The course is to last four years, and will be followed by a tour of duty in England or India. The graduates will then do probationary duty in administrative and instructional work, and eventually take the place of the area officers at present engaged.

Government aid is also furnished to United Service Institutions, which have been established in the larger centres. Lectures of great value are delivered by specialists, and war games, manœuvres, etc., carried out. Some of the institutions have large and well-selected libraries.

Schools of instruction, staff tours, etc., are also conducted, and a military magazine is published.

(xxi.) *Railways and Defence.* A War Railway Council, consisting of military and railway officers, was instituted in 1911. Its chief duties are to furnish advice and information regarding railway transport for military purposes, and to secure co-operation between the Commonwealth Defence Department and the States Railway Departments in regard to concentration and mobilization of troops. To prevent delay in the transport of troops, particularly that caused by the transhipment of baggage and implements of war, the Council has recommended the adoption of a uniform railway gauge on lines linking up the States capitals. An Engineer and Railway Staff Corps has been instituted, and numbered 51 officers on 30th June, 1913. Fuller details will be found in Official Year Book No. 6, pp. 1070-1.

(xxii.) *The Universal Training System in Operation.*—(a) *Special Instructional Staff.* The first work in the active carrying out of the scheme commenced with the training of 200 non-commissioned officers for the instruction of the projected army in a six months' camp. Area officers were chosen from the citizen forces, and underwent a six weeks' course of instruction. With the year 1911 came the active enrolment of the new cadets who commenced training on 1st July following. These comprised all males in training areas who were born in 1894, 1895, 1896, and 1897.

(b) *Stages.* The stages are as follows:—

First stage, January to June, 1911.—Existing junior and senior cadets continued to 30th June, 1911, but all equipment returned by that date; registration, inspection, and medical examination of lads whose 14th, 15th, 16th, and 17th birthdays occurred in 1911; preparations made to clothe and equip the new senior cadets.

Second stage, July, 1911, to June, 1912.—Registration, etc., in January and February, of lads whose 14th birthday occurred in 1912; new junior and senior cadet training from 1st July, 1911. About 17,000 of the latter, passed as recruits upon completion of this period, inaugurating the new citizen forces in the third stage (1st July, 1912).

Third stage, July, 1912, to June, 1913.—Registration, etc., in January and February, of lads whose 14th birthday occurred in 1913; new citizen forces:—training began with about 17,000 recruits (18-year-old persons allotted from the new senior cadets). During the third, fourth, and subsequent stages the new senior cadet force, numbering about 90,000, continues. Upon expiry of this period, the second quota of senior cadets (1895 lads) to the number of 17,000 passed as recruits to the citizen forces (1st July, 1913).

Fourth and subsequent stages, after July, 1913 (and each year).—Registration, etc., of lads whose 14th birthday occurs in 1914, and so on. In the fourth and subsequent stages, the new citizen forces will also be continued, increasing each year by about 17,000.

(c) *Summary of Working of the System in 1911-12 (Second Stage).* On 31st December, 1911 (six months after commencement of the new senior cadet training), the total registrations in training areas numbered 155,132. Of these, 105,133 had been medically examined, and 93.2 per cent. passed as fit. Exemptions in training areas (generally cases so far from places of training that attendance would involve great hardship) numbered 57,949. Of the total number liable for service 89,138 were actually in training.

The junior cadets do not register, but are medically examined. On 31st December, 1911, 33,767 had been examined, and 97.8 certified as fit.

(d) *Summary of the Working of the System in 1913-14 (Third and Fourth Stages).* The numbers up to 31st December, 1913, include the 1894 and 1895 quotas, who, on 1st July, 1912, and 1st July, 1913, passed to the citizen forces. They were as follows:—

UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, EXEMPTIONS, AND NUMBERS SERVING, CITIZEN FORCES, 31st DECEMBER, 1913 (1894 AND 1895 QUOTAS).

Military Dist.	Total Registrations.	Total Medically Exam'd.	Number Medically Fit.	Percentage Medically Exam'd who are Fit.	Number Unfit and Temporarily Unfit	Percentage Medically Exam'd who are Unfit and Temporarily Unfit	Total Exemptions Granted in Training Areas.	Total No. Liable for Training	Total Number Actually in Training.
1894 QUOTA.									
1st ...	5,578	2,676	2,131	79.6	545	20.4	3,338	2,131	2,124
2nd ...	12,529	7,747	6,515	84.0	1,232	16.0	5,603	6,515	6,454
3rd ...	10,914	6,578	5,425	82.5	1,153	17.5	5,198	5,425	5,323
4th ...	3,556	2,059	1,779	86.4	280	13.6	1,604	1,779	1,738
5th ...	1,606	831	725	87.2	106	12.8	784	725	725
6th ...	1,416	714	593	83.0	121	17.0	763	593	564
Total	35,599	20,605	17,168	83.3	3,437	16.7	17,290	17,168	16,928
1895 QUOTA.									
1st ...	6,479	3,091	2,392	77.5	699	22.5	3,956	2,366	2,311
2nd ...	13,584	8,214	6,538	79.6	1,676	20.4	6,594	6,420	6,190
3rd ...	11,573	7,143	5,493	77.0	1,650	23.0	5,836	5,400	5,293
4th ...	3,814	2,427	2,002	82.5	425	17.5	1,710	2,002	1,918
5th ...	1,718	960	798	83.1	162	16.9	857	798	770
6th ...	1,638	869	718	82.6	151	17.4	832	704	559
Total	38,806	22,704	17,941	79.1	4,763	20.9	19,785	17,690*	17,041

* Excludes 251 exempted under Regulation.

**UNIVERSAL TRAINING.—REGISTRATIONS, MEDICAL EXAMINATIONS, AND
EXEMPTIONS TO THE 31st DECEMBER, 1913.**

SENIOR CADETS.

Military District.	Total Registrations in Training Areas.	Total Medical Exams.	No. Medically Fit.	P'centage Medically Exam'd who are Fit.	Number Unfit and Temporarily Unfit	P'centage Medically Exam'd who are Unfit and Temporarily Unfit	Total Exemptions Granted in Training Areas.	Total No. Liable for Training.	Total No. Actually in Training.
1st (Q'land)	23,425	13,670	11,967	87.5	1,703	12.5	11,328	11,967	11,810
2nd (N.S.W.)	50,714	35,917	32,766	91.2	3,151	8.8	17,745	32,766	31,780
3rd (Vic.)	44,375	31,334	28,218	90.0	3,116	10.0	15,938	28,218	27,762
4th (S. Aust.)	13,934	9,866	8,914	90.3	952	9.7	4,926	8,914	8,787
5th (W. Aus.)	7,682	5,179	4,650	89.8	529	10.2	2,958	4,650	4,604
6th (Tas.)	6,307	3,496	3,078	88.0	418	12.0	2,987	3,078	2,910
Total	146,437	99,462	89,593	90.0	9,869	10.0	55,882	89,593	87,653

UNIVERSAL TRAINING.—MEDICAL EXAMINATIONS TO THE 31st DECEMBER, 1913.

JUNIOR CADETS.

Military District.	Total No. Medically Examined.	Number Medically Fit.	Percentage Medically Examined who are Fit.	Number Unfit and Temporarily Unfit.	Percentage Medically Examined who are Unfit & Temporarily Unfit.
1st (Queensland) ...	6,646	6,452	97.1	194	2.9
2nd (New South Wales) ...	20,473	19,858	97.0	615	3.0
3rd (Victoria) ...	15,342	15,153	98.8	189	1.2
4th (South Australia)...	3,800	3,685	97.0	115	3.0
5th (Western Australia) ...	2,804	2,727	97.3	77	2.7
6th (Tasmania) ...	1,445	1,416	98.0	29	2.0
Total ...	50,510	49,291	97.6	1,219	2.4

(e) *Total Number in Training under Compulsory System.* From these tables it will be seen that there are now approximately 34,000 citizen soldiers, and 87,600 senior cadets undergoing compulsory training, and that 50,000 junior cadets are certified for physical training.

(xxiii.) *Success of the System.* A slight amount of opposition has been manifested to the system. Though principally from shirkers, there are also a small number of persons who oppose military service on religious grounds. As already stated, however, conscientious objectors are allotted duties of a non-combatant nature. The prosecutions and penalties for evasion, etc., though not wholly, are mainly operative against shirkers. It is claimed that the scheme, both before its inception and since its successful inauguration, has had the support of leading statesmen of all political views, as well as the vast majority of the citizens of the Commonwealth. In general, the trainees are alert and well disciplined while on parade; and the interest and enthusiasm of the lads is shewn by the large number of candidates seeking promotion at competitive examinations (practical and theoretical), after courses of lectures, demonstrations, and special parades. Another

evidence of enthusiasm is the fact that the applicants for enrolment in the technical arms, where the total service is considerably greater than the absolute minimum of 16 days annually required from infantry and light horse, is always greatly in excess of the requirements of those arms. Further, a great deal of voluntary work is put in in all branches of the service, and the rifle clubs of the citizen units are well patronised. Many of the regiments have athletic, gymnastic, and swimming clubs, and sports meetings are frequently held. Patriotic citizens in local centres have contributed generously to funds for establishing bands, regimental clubs, annual sports gatherings, etc.

In regard to opposition to the system, the figures and percentages of prosecutions and convictions are interesting. Registrations to 31st January, 1914, numbered 234,030: of these 122,933 were liable for training. Prosecutions from 1st July, 1911 (inauguration of system), to 31st January, 1914, numbered 22,402. Of these 19,317 resulted in convictions. The average annual prosecutions were thus 8672; convictions, 7477. It must be remembered that these figures include persons prosecuted and convicted more than once, and that all prosecutions and convictions are not against those actually liable for service, but include cases against employers (for penalising in employment, contrary to section 134 of the Act) and parents and guardians (failing to register sons, etc.). Percentage of annual prosecutions to registrations is 3.7; to number liable for training, 6.90; percentage of trainees prosecuted to number registered and liable is not available, but the figures would be substantially reduced if (parents, employers, and those prosecuted more than once being deducted) only those liable for training were shewn. Further, a prosecution follows shortage of drills, and in many cases is not the outcome of active opposition.

§ 2. Naval Defence.

1. Naval Defence under the States.—Prior to 1890, when arrangements were made with the British Government for the maintenance of an Australian squadron, provision for naval defence had been instituted in New South Wales, Victoria, Queensland, and South Australia, where gunboats, torpedo boats, or small cruisers were commissioned, and naval volunteers raised. A fuller historical account of the Australian naval forces under the States is given in the Commonwealth Year Book, No. 2, pp. 1084, 1085.

2. The Naval Agreement with the British Government.—(i.) *The Original Compact.* The naval defence of Australasia and its trade was entrusted primarily to ships of the Imperial Navy, maintained under an agreement entered into between the British Government and the Governments of the Commonwealth and New Zealand, and at their joint charge. This agreement was embodied in Acts passed by the several Legislatures some ten years prior to Australian federation. According to its terms, a naval force, additional to the vessels of the Australian Naval Station, which were to be maintained at their normal strength, was to act as an auxiliary squadron. It consisted of five fast third-class cruisers and two torpedo gunboats, and its special function was the protection of the floating trade in Australasian waters. The agreement was made for ten years, and was then, or at the end of any subsequent year, to be terminable only upon two years' notice being given. On its termination, the vessels were to remain the property of the Imperial Government. Three cruisers and one gunboat were to be kept continuously in commission, and the remainder in reserve in Australasian ports, but ready for commission whenever occasion might arise. The vessels were to remain within the limits of the Australasian station, and were to be employed, in times of peace or war, within such limits, in the same way as the Sovereign's ships of war, or employed beyond those limits only with the consent of the Colonial Governments. The first cost of the vessels was paid out of Imperial funds, but the Colonial Governments paid interest on the prime cost at 5 per cent. (up to a maximum of £35,000 per annum), and a sum not

exceeding £91,000 for annual maintenance of the vessels, or a total annual contribution of £126,000. In times of emergency or actual war, the cost of commissioning and maintaining the three vessels kept in reserve during peace, was to be borne by the Imperial Government, and, in every respect, the vessels were on the same status as the ships of war of the Sovereign, whether in commission or not. The officers and men of those in commission were subject to a triennial change. The tenth annual contribution, which was payable in advance on 1st March, 1900, apportioned on a population basis, was as follows:—New South Wales, £37,973; Victoria, £32,749; New Zealand, £21,304; Queensland, £13,585; South Australia, £10,439; Western Australia, £4816; Tasmania, £4776.

(ii.) *The Agreement of 1903.* The agreement was not dissolved by the union of six of the contracting colonies, but its renewal, with some alterations, was embodied in the Naval Agreement Act of 1903, the Parliament of New Zealand also assenting. The strength of the squadron was altered; and the amount to be contributed was increased. One-half of the annual cost of maintenance was to be borne by the colonies—five-sixths of the half (but not exceeding £200,000) by Australia, and one-sixth (but not exceeding £40,000) by New Zealand. The agreement, like the earlier one, was for ten years.¹ By a subsequent arrangement the strength of the squadron was established at one first-class armoured cruiser, three second-class cruisers, and five third-class cruisers.

3. Development of Commonwealth System from 1901 to 1913.—Administration. Australian defence, in both its branches (military and naval), passed to the Commonwealth in 1901, and in 1903 the naval agreement was renewed. Prior to 1905 a naval officer commanding administered the naval forces under the minister. When the Council of Defence was established in that year, the Naval Board was constituted and took over the administration of the Commonwealth naval forces. Continuity of policy and administration are thereby believed to be ensured, whilst efficiency and uniformity are provided for in the scheme of inspection and report by an officer who, as Director of Naval Forces, is appointed to deal with the training of the *personnel*, and the condition of the *matériel*, of naval forces and works. The floating trade of the Commonwealth exceeds £200,000,000 per annum, and its adequate protection involves corresponding naval provision, with such naval war material as will permit the principal lines of sea communication being kept open, and ensure that Australian ports are fully defended.

4. The Present System.—(i.) Australian Naval Policy. An outline of the development of Australian naval policy will be found in Commonwealth Year Book No. 3, pp. 1060, 1061. For the more effective coastal defence of the Commonwealth it was decided in 1909 to create an Australian naval force, to replace the squadron heretofore maintained under the naval agreement with the British Government. It was decided at the Imperial Defence Conference in 1909 that Australia should provide a fleet unit, consisting of an armoured cruiser* of the *Indomitable* class, three unarmoured cruisers of the *Bristol* class, six destroyers of the improved "River" class, and three submarines of "C" class†; also the necessary auxiliaries, such as docks and depôt ships. The cost of construction at English prices would be about £3,750,000, and the estimated annual cost about £750,000. Of this sum the Imperial Government offered to contribute £250,000, but the Commonwealth Government decided to bear the whole cost.

(ii.) *The Australian Fleet.* The building of the fleet and the training of the crews is proceeding. Skilled artisans were despatched from Australia to gain practical experience in naval shipbuilding, and vessels are constructed in both Britain and Australia. Sailors of all ratings are also trained for the Commonwealth service. The first instalment of the Australian fleet unit consisted of two torpedo boat destroyers, of British

1. Since modified; see page 950, *infra*.

* Now called "battle cruiser." † Since altered to two submarines of "E" class.

construction. One was launched at Govan-on-the-Clyde, on 9th February, 1910; a second at Dumbarton on 9th April following. The vessels are named after Australian rivers, those launched in Britain having been christened *Parramatta* and *Yarra*. They were commissioned in September, 1910, as ships of the Royal Navy, and arrived in Australia in December, 1910. A third destroyer, the *Warrego*, was shipped to Sydney in parts. She was re-erected at the Commonwealth dockyard, Cockatoo Island, Sydney, launched on 4th April, 1911, and commissioned on 1st June, 1912. A description of these and the other vessels of the fleet will be found in Official Year Book No 6, pp. 1066-7. Three other destroyers (to be named *Torrens*, *Swan*, *Derwent*) are being built at the Commonwealth dockyard in Sydney.

The construction of the battle cruiser *Australia* was commenced in June, 1910. She was launched on 25th October, 1911, and commissioned in June, 1913, arriving in Australian waters in the following September. Two smaller cruisers, the *Melbourne* and *Sydney*, were constructed in Great Britain. They were launched in May, 1912, and arrived in Australian waters in 1913. The third cruiser, the *Brisbane*, is being built at the Commonwealth dockyard, Sydney, and will probably be launched in August, 1914. The two submarines have been built in England, and arrived in Australian waters in May, 1914. Pending completion of the *Brisbane*, the *Encounter* has been lent from the Royal Navy for service in the Royal Australian Navy. The Admiralty has also presented the Commonwealth Government with the cruiser *Pioneer*. This vessel was taken over by the Naval Board on 1st March, 1913, and recommissioned with the crew of the *Protector* (augmented as necessary) for service as a naval reserve training ship, the *Protector* being used for service as a tender to the Gunnery School.

The following table shews the vessels of the Royal Australian Navy, completed and building:—

LIST OF SHIPS OF THE ROYAL AUSTRALIAN NAVY, APRIL, 1914.

Vessel.	Description.	Displacement.	Power.	Position.
		Tons.		
<i>Australia</i> ...	Battle cruiser ...	19,200	44,000 h.p.	Commissioned
<i>Brisbane</i> ...	Light cruiser ...	5,600	22,000 h.p.	Building, Sydney
<i>Cerberus</i> ...	Turret ship ...	3,480	1,660 h.p.	Commissioned
<i>Childers</i> ...	1st class torpedo boat	...	...	"
<i>C'nless of Hopetoun</i>	" "	...	...	"
<i>Derwent</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Encounter</i> ...	Light cruiser ...	5,880	12,500 h.p.	Commissioned
<i>Gayundah</i> ...	Gunboat ...	360	400 h.p.	"
<i>Melbourne</i> ...	Light cruiser ...	5,600	22,000 h.p.	"
<i>Paluma</i> ...	Gunboat ...	360	400 h.p.	"
<i>Parramatta</i> ...	Torpedo boat destroyer	700	12,000 h.p.	"
<i>Pioneer</i> ...	Light cruiser ...	2,200	7,000 h.p.	"
<i>Protector</i> ...	Gunboat ...	920	1,641 h.p.	"
<i>Swan</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Sydney</i> ...	Light cruiser ...	5,600	22,000 h.p.	Commissioned
<i>Tingira</i> ...	Boys' training ship ...	1,800	...	"
<i>Torrens</i> ...	Torpedo boat destroyer	700	12,000 h.p.	Building, Sydney
<i>Warrego</i> ...	" " ...	700	12,000 h.p.	Commissioned
<i>Yarra</i> ...	" " ...	700	12,000 h.p.	"
<i>A E 1</i> ...	Submarine ...	800	1,750 h.p.	"
<i>A E 2</i> ...	" " ...	800	1,750 h.p.	"

(iii.) *Personnel.* The fleet is manned, as far as possible, by Australians, supplemented by Imperial officers and men. Of the former, besides the previously existing permanent naval forces, those trained in the British fleet are available. It is intended that there shall be interchangeability with the Royal Navy of officers and men, and also of ships. Recruiting centres have been established in the Commonwealth with excellent results. The naval reserves comprise (a) members of the Australian branch of the Royal Naval Reserve, (b) members of the Citizen naval forces, and (c) Senior naval cadets. The navy has first choice from amongst the trainees under the compulsory system. The following table shews the strength of the naval forces in March, 1914 :—

**STRENGTH OF THE NAVAL FORCES (PERMANENT AND RESERVES),
MARCH, 1914.**

Description of Force.	Number Borne.	
	Officers.	Men.
Royal Australian Navy (Sea-going)	222	3,264
(Training Ship <i>Tingira</i> Boys 182)		
Royal Australian Naval Reserve—		
Administrative and Instructional Staff (Permanent)...	31	110
Reserve (M) (late Militia)	30	513
Reserve (Sea-going)*	16	180
Reserve (O) Adults	...	1,171
„ Senior Cadets	...	3,062
	299	8,300
Total	8,599	

* Taken over from Admiralty, 1st July, 1913.

(iv.) *Visit and Report by Sir Reginald Henderson.* At the invitation of the Government, Admiral Sir Reginald Henderson visited Australia to advise upon naval matters generally. A summary of his report will be found in Official Year Book, No. 6, pp. 1067-8. It provides for 52 vessels and 15,000 men; expenditure on construction, works, etc., £40,000,000, with an ultimate annual naval vote of £4,794,000. Six naval bases, and eleven sub-bases, are recommended. The 52 vessels would consist of 3 armoured cruisers, 10 protected cruisers, 18 destroyers, 12 submarines, 3 dépôt ships, and 1 fleet repair-shop, the building of which would extend over 22 years. The annual cost of *personnel* would be £601,000 in 1913-14, and would increase to £2,226,000 in 1933-4. Annual cost of maintenance of ships in commission would be £262,000 in 1913-4, rising to £1,226,000 in 1933-4. Annual expenditure on construction and maintenance of ships would increase from £2,349,000 in 1913-4 to £4,824,000 in 1932-3. The strength of the fleet would be 23 ships in 1918, 42 ships in 1923, 48 ships in 1928, and 52 ships in 1933. In the earlier years portion of the crews would be obtained from Great Britain, but this would cease in the period 1923-8.

(v.) *Naval College.* A naval college has been established, and its staff appointed. A temporary institution at Geelong, Victoria, was opened in March, 1913. The permanent college is being built at Captain's Point, Jervis Bay, and is to be furnished with

all necessary workshops, machinery, etc. The college is organised as a ship. Its complement is 13 officers and 44 petty officers and men. In addition, there are six members of the civil teaching staff. In April, 1914, the cadet roll numbered 59.

(vi.) *The Compact with the Imperial Government.* The Australian Government is building its navy according to the terms of an official paper (cd. 5746-2) submitted to the Imperial Conference held in London in 1911, and on the plan formulated by Admiral Henderson (after an inspection of Australia's capitals and other ports and coast line, in 1911). There is no formal contract or agreement between the British and the Commonwealth Governments. The last actual agreement was that of 1903, which continued in force the original agreement, whereby the Imperial Government maintained a squadron in Australian waters, the Commonwealth paying £200,000 per annum to the Imperial Government. Before the expiration of the time for which the agreement was made, the Commonwealth began the work of fleet construction. Up to the year 1911-12, £200,000 was annually paid. For 1912-13, £175,000 was set down in the Estimates, and £166,600 paid. There is no amount under "Naval Agreement Act" in the 1913-14 Estimates. Some departures are made from Admiral Henderson's recommendations, but generally they have been adopted. The Commonwealth is now fulfilling the larger obligation of fleet-building, and is maintaining its own vessels. The establishment of naval bases and sub-bases required for the fleet unit is also proceeding. The Commonwealth parliament amended the *Naval Agreement Act 1903*, by No. 10, of 1912 (*Naval Agreement Act 1912*), providing that the Governor-General may, from time to time, arrange with the Imperial Government for the reduction of the Australian squadron, and for reduction in the naval subsidy.

As already stated, the present situation is not governed by a formal contract or agreement. The Commonwealth Government has, by regulations and orders, given effect to some, and intends giving effect to others of the items submitted to the Conference.

(vii.) *Training Ships.* A vessel (*Sobraon*) purchased from the Government of New South Wales, has been fitted up as a boys' naval training ship (*Tingira*), and was commissioned in April, 1912. The full capacity of the ship is 300. A draft of 100 started training on 1st June, 1912, and recruiting has since been continuous. The age of entry is $14\frac{1}{2}$ to 16 years, and the boys engage to serve until they reach the age of 25. Upon medical certification of fitness, they are entered for service in the Royal Australian Navy. The boys are to provide the *personnel* of the new fleet unit, and already a number of them have been drafted into the various vessels of the fleet. The training ship is thus a very important part of the new scheme. The strength of trainees in March, 1914, was 182.

(viii.) *The Naval Station of the Commonwealth of Australia.* The following are the limits of the Naval Station which, since 1st July, 1913, have been controlled by the Commonwealth Government, acting through the Naval Board:—On the North: From 95 degrees East longitude by the parallel of 13 degrees South to 120 degrees East longitude; thence North to 11 degrees South latitude; thence to the boundary with Dutch New Guinea, on the south coast, in about longitude 141 degrees East; thence along the coast of British New Guinea (Papua) to the boundary with German New Guinea, in latitude 8 degrees South; thence east to 155 degrees East longitude. On the East: By the meridian of 155 degrees East longitude to 15 degrees South latitude; thence to 28 degrees South latitude on the meridian of 170 degrees East longitude; thence south to 30 degrees South latitude; thence west to the meridian of 160 degrees East longitude; thence south. On the South: By the Antarctic Circle. On the West: By the meridian of 95 degrees East longitude.

§ 3. Expenditure on Defence.

1. **Expenditure, 1908-9 to 1913-14.**—The following table gives the expenditure of the Department of Defence from 1908-9 to 1912-13, and the estimate for 1913-14:—

EXPENDITURE ON DEFENCE, 1908-9 to 1913-14.

Branch or Department.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14. Estimate
	£	£	£	£	£	£
Administrative — Central Administration	23,884	26,366	*104,740	*289,558	*245,918	*287,854
Naval Forces	59,251	63,143	96,291	248,738	608,955	869,404
Military Forces	625,600	853,420	947,948	1,172,871	1,386,547	1,680,457
Rent, Repairs, and Maintenance	29,798	29,621	42,782	46,765	58,779	64,114
Additions and New Works	53,814	81,460	177,623	244,520	396,312	567,830
Defence Arms, Equipment, &c.	47,206	196,481	273,387	561,596	551,895	500,500
Audit Office	960	954	1,140	1,180	1,298	1,381
Pensions & Retiring Allowances	1,017	781	965	2,269	1,121	1,130
Supervision of Public Works by State Officers	822	1,046	3,767	2,905	4,943	8,000
Naval Agreement	200,000	200,000	200,000	200,000	166,600	...
Miscellaneous "Other"	8,238	21,589	292	...	...	...
Fleet Unit	...	60,000	1,135,000	1,108,171	604,397	1,002,432
Naval Works & Armament	...	...	24,780	38,696	180,865	165,721
Interest and Sinking Fund on Transferred Properties	...	...	...	162,132	123,561	143,080
Miscellaneous	...	...	...	638	1,307	...
Sites for Defence purposes { payable	...	...	...	...	...	300,000
Machinery, &c., Cockatoo Is. { from loan	...	...	...	...	...	175,000
Total	1,050,590	1,534,881	3,008,705	4,080,039	4,331,498	5,746,853

* Includes establishments under the control of the Central Administration.

2. **Expenditure Compared with Various Countries.**—The total expenditure on defence and the expenditure per inhabitant, according to the latest available estimates, are, in the countries indicated, as follows:—

EXPENDITURE ON DEFENCE—VARIOUS COUNTRIES.

Country.	Year.	Army.	Navy.	Total.	Per Inhabitant.
		£	£	£	s. d.
Great Britain	1913-14	28,220,000	46,809,000	74,529,000	32 3
Germany	1912-13	47,263,000	23,522,000	70,785,000	21 5
France	1913	38,286,000	18,452,000	56,738,000	28 7
Italy	1912-13	14,047,000	8,057,000	22,104,000	12 9
Austria-Hungary	1912	15,736,000	2,990,000	18,726,000	7 6
Switzerland	1913	1,772,000	...	1,772,000	9 1
Russia	1912	56,806,000	15,926,000	72,232,000	8 8
Spain	1913	6,391,000	2,827,000	9,218,000	9 3
Portugal	1912-13	2,278,000	1,012,000	3,290,000	12 1
Norway	1912-13	867,000	337,000	1,204,000	9 11
Sweden	1913	3,063,000	1,447,000	4,510,000	16 0
Denmark	1913-14	1,081,000	544,000	1,625,000	11 5
Holland	1913	2,780,000	1,678,000	4,458,000	14 6
Belgium	1913	3,260,000	...	3,260,000	8 7
United States	1912-13	31,600,000	26,000,000	57,600,000	12 0
Canada	1911-12	1,580,000	...	1,580,000	4 5
Japan*	1912-13	7,679,000	4,082,000	11,761,000	4 6
Australia†	1913-14	3,291,000	2,456,000	5,747,000	23 7

* Excluding extraordinary expenditure. † Total defence expenditure.

§ 4. Industrial Establishments and Remount Depot.

1. Commonwealth Factories.—Four factories have been established under the authority of the Defence Act in connection with the Defence Department. The Commonwealth Harness, Saddlery, and Leather Accoutrements Factory at Clifton Hill, Victoria, was opened in September, 1911. On 31st March, 1914, there were 173 persons employed, including 33 females. A large quantity of harness and saddlery, and leather and canvas equipment has been turned out for the Defence and Postmaster-General's Departments. The factory is now able to cope with practically the whole of the requirements of these departments in the way of leather and canvas equipment. At the Cordite Factory at Maribyrnong, Victoria, cordite is manufactured for the cartridges required for military purposes. On 31st March, 1914, the employees numbered 97. The first output was in June, 1912, and the average output of finished cordite after the factory had been in operation six months was over $5\frac{1}{2}$ tons per month. The Clothing Factory at South Melbourne, Victoria, commenced operations on 3rd January, 1912. Since 1st July, 1912, a satisfactory output has been maintained. The number of employees on 31st March, 1914, was 414, of whom 324 were females. Extensions to the factory will provide accommodation for 300 more hands. The establishment will ultimately supply the whole of the uniform clothing required for the Defence Forces and the Postmaster-General's Department. The Small Arms Factory at Lithgow, N.S.W., was opened on 1st June, 1912. The first instalment of Australian arms was delivered in May, 1913. Employees numbered 379 on 31st March, 1914. A fifth Commonwealth factory has been established for woollen fabrics, and a manager appointed. A site has been secured at Geelong, Victoria, and the construction of the buildings commenced.

2. Expenditure. The expenditure up to 30th June, 1912, in the purchase of land, machinery and plant, factory fittings, and furniture in connection with the factories now in operation, was approximately as follows:—

Small Arms Factory...	...	...	...	...	£149,000
Cordite Factory	...	...	...	...	85,800
Clothing Factory	...	...	...	...	12,300
Harness Factory	...	...	...	...	6,500

It is estimated that the initial cost of establishing the woollen mills will be about £85,000.

3. Remount Depot. The Act of 1910 authorised the establishment and maintenance of horse depots, farms, and stations for the breeding of horses. Up to the present 1686 remounts have been purchased. They are primarily to supply the requirements of the Field Artillery Batteries, but are also available for the use of other mounted units. Remount depots have been purchased or are leased in each of the military districts, and veterinary hospitals have also been established in the larger States. In Victoria and South Australia stables have been built. A remount section of the Army Service Corps has been formed for the purpose of breaking, training and looking after remounts generally. The present personnel of this corps is 158.

§ 5. Australian Contingents.

1. New Zealand and Sudan Campaigns.—Many colonists served with the Imperial forces in the New Zealand war. Fuller particulars will be found in Official Year Book No. 6, p. 1071. In 1885 a field battery, an infantry battalion, and an ambulance corps, numbering in all 770, with 218 horses, left New South Wales to take part in the Suakin campaign.

2. South African War.—In 1899 the outbreak of war with the Boers led to the several colonies offering contingents. This service was continued when, on 1st March, 1901, the control of the defence forces passed over to the Commonwealth. Besides the troops officially organised, many Australians served as individuals in the campaign. The following table shews the strength of the military contingents sent at various times from Australia to South Africa:—

STRENGTH OF MILITARY CONTINGENTS SENT FROM AUSTRALIA TO SOUTH AFRICA.

State.	State Troops at State Expense.			State Troops at Imperial Expense.			Commonwealth Troops.			Grand Total.		
	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.	Officers.	Other Ranks.	Horses.
New South Wales	160	3,217	3,135	76	1,308	1,443	78	1,271	1,294	314	5,796	5,872
Victoria	47	751	830	77	1,569	1,877	69	1,052	1,118	193	3,372	3,825
Queensland	39	694	868	73	1,346	1,603	37	699	736	149	2,739	3,207
South Australia	20	326	258	46	644	696	23	467	490	89	1,437	1,444
Western Australia	18	331	269	34	540	608	15	291	306	67	1,162	1,183
Tasmania	6	173	88	17	358	422	13	290	303	36	821	783
Total	290	5,492	5,418	323	5,765	6,619	235	4,070	4,247	848	15,327	16,314

There were, in addition, several special service officers attached, at the request of the colonial Governments, to the British forces; these officers served with the Imperial troops with a view to aiding the development of the Commonwealth forces, particularly in regard to the routine and administration of troops on service.

3. **The China War.**—The Home Government also accepted the offer of contingents from Australia on the outbreak of the Boxer rebellion in China. Naval volunteers were furnished by New South Wales and Victoria, and South Australia equipped a gunboat for the Imperial service. The strength of the New South Wales contingent was 260, and that of the Victorian 200, of all ranks.

§ 6. New Zealand Defence.

A more detailed account of the New Zealand military system will be found in Official Year Book No. 6, pp. 1073-4. The liability of all male inhabitants for service is laid down in the Defence Act and regulations. These provide for the gradual military training of every male from the age of 14 to the age of 25, after which service in the Reserve up to the age of 30, is required. There are no distinctions and no exceptions, except physical unfitness. Persons with conscientious objections to fighting serve in non-combatant branches.

As junior cadets, from 12 to 14, all boys undergo a course of elementary military training (chiefly physical) under the Education Department. At 14 they are transferred to the senior cadets, remaining in that division till 18, and performing regular military work, though not liable for active service. At 18 active service in the regiments of the territorial force begins, and continues to the commencement of the reservist period (which period extends from 25 to 30). During training in the regiments service may be demanded in case of war or other national emergency. A secondary reserve is furnished by the rifle clubs. Registration of senior cadets for service is compulsory at the age of 14. A register is also kept of all males under the age of 22.

The numbers registered up to 31st July, 1913, were:—Territorials, 29,650; senior cadets, 42,279; total, 71,929. The numbers actually on the strength on 30th June, 1913, were:—Territorials, 24,763; Senior cadets, 24,743; members of rifle clubs, 6780; total, 56,286. The establishment of the territorial forces was 30,000. The total strength of the permanent force, which is not included in the above figures, was 607 on 30th June, 1913.

The following table gives the ordinary defence expenditure of New Zealand from 1908-9 to 1912-13:—

DEFENCE EXPENDITURE, NEW ZEALAND, 1908-9 to 1912-13.

Year	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Expenditure	£193,976	£188,950	£212,281	£508,043	£605,343

In addition, the sum of £525,000 has been expended under the *Naval Defence Act, 1909*.

SECTION XXIX.

PAPUA (BRITISH NEW GUINEA).

§ 1. New Guinea.

1. **Geographical Situation of New Guinea.**—New Guinea, frequently described as the largest island in the world, lies to the north-east of Australia, between $0^{\circ} 25'$ and $10^{\circ} 40'$ S. latitudes, and between $130^{\circ} 50'$ and $150^{\circ} 35'$ E. longitudes. Its estimated area exceeds 300,000 square miles, the greatest length being 1490 miles and the greatest breadth 480 miles.

2. **Discovery.**—The island was probably sighted by Abreus in A.D. 1511. The first visit by Europeans was apparently either that by the Portuguese Don Jorge de Meneses on his way from Goa to Ternate in 1526, or that by the Spaniard Alvaro de Saavedra in 1528. In 1606 Torres, having parted company with De Quiros at the New Hebrides, sailed on his way to the Philippines, through the strait which separates the island from Australia, and which now bears his name.

3. **Colonisation.**—Little progress was made for many years in exploration and settlement. First the Portuguese, and afterwards the Dutch, who to a great extent replaced them as the principal European traders in the East, seem to have jealously excluded other traders and adventurers, and to have kept the knowledge of their discoveries to themselves. The coasts were visited by Roda, Schouten, Lemaire, Tasman, Dampier, Torres, Bougainville, and Cook; but the difficulties of navigation, the savagery of the islanders, and the tempting fields for enterprise in the more temperate regions further south, diverted the energy of traders and voyagers. Forrest describes a voyage by himself in 1774. In 1793, New Guinea was annexed by two commanders in the East India Company's service. Since that date the Dutch have made extensive surveys of the western portion, and the British and Germans have occupied and colonised the eastern.

4. **Partition.**—These three powers have agreed to the partition of New Guinea, each having suzerainty over islands adjoining its own territory. The whole of the portion west of the 141^{st} degree of latitude, comprising about 150,000 square miles, or nearly half the island, belongs to the Dutch. The eastern half is divided in almost equal portions between Great Britain and Germany, the area possessed by each (with adjacent islands) being about 90,000 square miles. An Anglo-German boundary commission, appointed for the purpose of defining the boundary between the territories of the two nations, started operations on 26th December, 1908, and completed the field-work on 27th October, 1909. The total length of boundary delimited was $66\frac{1}{4}$ miles. The work was both important and difficult. For a considerable portion of the survey, the country was exceedingly rough and mountainous, and the natives hostile. In one instance, the line was carried over a range at an elevation of 11,110 feet. The Dutch colony forms part of the residency of Ternate in the Moluccas, and has not been extensively developed. The German protectorate, where considerable commercial development has taken place, includes the northern part of the eastern half of the mainland, known as Kaiser Wilhelm's Land, and the large islands of the Bismarck Archipelago and the Solomon Group, as well as nearly 200 smaller islands. The south-eastern portion of New Guinea, nearest Australia, is British, and a dependency of the Commonwealth of Australia.

§ 2. The Australian Dependency of Papua.

1. **Australian Dependency of Papua.**—Surveys of the east coast of New Guinea by Stanley, Yule, Blackwood, Moresby, and others, brought home to Queensland, and to Australia generally, the danger to her commerce which would result from foreign possession of the islands and coasts opposite to Cape York, and from the holding by a hostile power of the entrance to the splendid waterway inside the Barrier Reef. The mainland opposite the shores of Queensland east of the 141st meridian was therefore annexed by that colony in 1883; but the action was disallowed by the British Government. In 1884, however, a British protectorate was authoritatively proclaimed by Commodore Erskine over the region lying east from the 141st meridian as far as East Cape, with the adjacent islands as far as Kosman Island. In the year following an agreement with Germany fixed the boundaries between the possessions of the two countries, and to Great Britain was assigned the portion now known as Papua, lying between the extreme limits of 5° and 12° S., and 141° and 155° E. The British protectorate was subsidised by Queensland, New South Wales, and Victoria, and lasted till 4th September, 1888, when it was proclaimed a possession of the Empire. Its constitution was then that of a Crown colony, in association, however, with Queensland. Administration was in the hands of a Lieutenant-Governor, aided by an executive and a legislative council, and advised by a native regulation board. Port Moresby, on the south coast, was made the headquarters of the official establishment; a supreme court was established there, and magisterial courts in the districts; and an armed native constabulary force, numbering 250 on 30th June, 1913, under a European officer, was instituted for the maintenance of order. There were also, on the same date, 536 native village constables employed by the Crown.

2. **Annexation by Commonwealth.**—The territory was placed under the authority of the Commonwealth on 1st September, 1906, by proclamation issued in pursuance of Letters Patent of the 18th March, 1902, and was accepted by the Commonwealth by the Papua Act 1905, which came into force by virtue of the proclamation aforesaid. The transfer was made under the authority of section 122 of the Constitution (see p. 34 hereinbefore). The territory is now under the administration of the Commonwealth, but not included within it, and is divided into eleven magisterial districts.

3. **Physical Characteristics.**—Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Sudest and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Straits. The length of Papua from east to west is upwards of 800 miles; towards either end the breadth from north to south is about 200 miles, but about the centre it is considerably narrower. The territory comprises also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is computed at 3664 miles—1728 on the mainland and 1936 on the islands. The total area is about 90,540 square miles, of which 87,786 are on the mainland and 2754 on the islands. From the eastern end of the territory rises a chain of mountains, which forms a great central ridge and attains its greatest altitude, as it extends westwards, in the Owen Stanley Range, the highest points of which are Mount Victoria (13,200 feet), Mount Scratchley, the Wharton Range, and Mount Albert Edward. The western end of the possession is for nearly 300 miles generally low and swampy for some distance along the coast. The whole territory is well watered. The great mountains and a great portion of the lower country are covered with forest. The islands are mountainous, and, with the exception of the low coral islands of the Trobriand Group, part of Murua, and a few others of small dimensions, principally of volcanic formation. The highest is Goodenough Island, 8000 feet. The largest rivers of the mainland flow into the Gulf of Papua. The Fly River, with its tributaries, drains an extensive area of the territory of the Netherlands, as well as the British. Its length in British territory is about 620 miles, and it is navigable by a steam launch for over 500 miles. Other important rivers are the Turama and the Purari. There are many excellent harbours.

§ 3. Population.

The total white population of Papua on 30th June, 1913, was 1219, made up of 847 adult males and 223 adult females (adults being persons over 16 years of age), and 68 male and 81 female children. The following table gives the population of Papua for the last five years:—

WHITE POPULATION OF PAPUA, 1909 to 1913.

YEAR ENDED 30TH JUNE.

1909.	1910.	1911.	1912.	1913.
702	879	1,032	1,064	1,219

The chief occupations of whites are:—Government officials and employees, 118; planters (including managers and assistants), 151; and miners, 174.

It is not possible to make a reliable estimate of the number of natives, owing to the fact that much of the interior country is unexplored. It is generally assumed to be somewhere between 400,000 and 500,000. These speak many languages and dialects. The coloured population, other than Papuans, numbered on 30th June, 1912, 405. On the same date, half-castes, including Papuan half-castes, totalled 324. An Immigration Restriction Ordinance prohibits the immigration into the territory of persons who fail to pass the dictation test, or who are persons of bad character, or likely to become a charge upon the public. Exemptions may, however, be granted by the Lieutenant-Governor to persons of special skill whom it is desired to employ as overseers or foremen.

§ 4. Native Labour.

The rights of both employer and labourer are conserved by the Native Labour Ordinances. Service on the part of the native is voluntary, and he must be justly treated, and properly housed and fed. Employers may recruit personally, or obtain their natives through a licensed recruiter. Contracts of service must be in writing, entered into before a magistrate or other qualified officer, and the natives must be returned to their homes on completion of engagement. The labour question is complicated by the communistic system which prevails in the villages. Native custom demands that the friends or fellow-clansmen of the returned labourer receive a share in whatever he gets. The result is that the stimulus of individual interest is largely absent. During the period of service the recruiter or employer is personally responsible for the native's welfare. Refusal to work after engagement, or desertion from service, renders the labourer liable to imprisonment. On the other hand, a magistrate may terminate an engagement where unjust or harsh treatment by the employer is proved. The term of indenture must never exceed three years, and in the case of miners and carriers eighteen months is the limit, but re-engagements may be made. The magistrate must satisfy himself that the remuneration is fair, that the native is willing to undertake the service, and that there is no probability of unfair treatment or detention. Wages must be paid in the presence of an officer. A medicine chest, stocked with necessary drugs and first aid instruments, must be kept by all employers.

Just treatment, good food, and satisfactory remuneration for his labour have made the Papuan savage an excellent servant. With considerable natural aptitude and intelligence, he is able to understand readily what is required by his employer; consequently

native labour is very largely engaged by the Administration for the construction of roads and public works, and by the private employer for the clearing and upkeep of plantations. In some districts, however, the natives manifest a marked unwillingness to work. Actual ill-treatment of native employees may be said to be non-existent.

The number engaged under contract of service during the year ended 30th June, 1913, was 6975. In addition, there were nearly 3000 natives employed who were not under contract of service.

§ 5. Production.

1. **Papuan Products.**—The products of the territory are obtained from its agricultural, forestal, fishing, mining, and manufacturing industries. There is a Papuan Court at the Imperial Institute, London, where, beside maps, handbooks and reports, a representative collection of products is shewn, additions being made to the exhibits from time to time. Displays of Papuan produce are also made at Exhibitions held in the Commonwealth. The industries of Papua are not numerous, but they are becoming more diversified. In many cases, some years must elapse before the raw material is available for commerce.

2. **Agriculture.**—(i.) *Soil and Rainfall.* The physical features of Papua are favourable to agriculture. Rich soils at varying elevations, and heavy and evenly-distributed rainfall, have ensured success in cultivating almost every tropical product of value. The territory comprises immense areas of rich alluvial and volcanic soils along the coast, and equally fertile land at elevations up to 6000 feet. Splendid rainfalls are recorded, except over a belt of country which runs back from the coast to the hills, and which has its dry season from May to November. This "dry" area is admirably suited for the production of tobacco, fibres, cotton, etc. There are eighteen meteorological stations throughout the territory. An economic museum and agricultural library have been established. By anticipating and removing many of the pioneering difficulties the Government has made the task of the colonist an easy one. The feature of recent years has been the steady investment of capital in the development of large areas previously acquired. One of the principal difficulties of planters is the heavy growth of weeds, and the Government has undertaken experiments with the planting of grasses to take the place of weeds, and so keep down the gross rank vegetation.

(ii.) *Plantations.* On 31st March, 1913, there were 216 plantations. Agricultural settlement has been mostly in the Central and Eastern Divisions, though plantations are rapidly spreading in other districts, particularly the South-Eastern, North-Eastern, and Western. The total area planted was 35,363 acres, or an average of 164 acres for each plantation. The principal plantation industries entered upon up to the present are cocoanuts, rubber, sisal hemp, and cotton. Secondary agricultural industries are the cultivation of bowstring hemp, coffee, vanilla, kapok, cocoa, tapioca, cinnamon, tea, and tobacco. The natives are compelled by an ordinance to plant cocoanuts for food supply. It is estimated that the total area so planted amounts to 350,000 acres. The following table shews the areas under the different cultures (exclusive of maize and garden products) on 31st March, 1913:—

							Acres.
Cocoanuts	...	...	...	...	...	...	21,958
Rubber	...	...	...	...	...	...	6,256
Hemp	...	...	...	...	...	...	3,057
Cotton	...	...	...	...	...	...	609
Other cultures (including fruit trees)	...	...	...	...	...	...	3,483
Total	...	...	...	...	...	...	35,363

(iii.) *Government Plantations and Experimental Stations.* There are five Government plantations of cocoanuts and Pará rubber, with a total area under cultivation of 733 acres. New Government plantations are being developed by five annual loans of £5000

each from the Commonwealth. During 1912-13, a total area of 649 acres was planted under this scheme.

Sylvicultural nurseries have been established in connection with the plantations with the object of supplying settlers with seeds and plants, which have been imported from the East and West Indies, Central America, tropical Australia, Ceylon, the Malay States, and the Solomon Islands. At the experimental stations, the suitability of soil and climate for different products is tested and correct methods of cultivation demonstrated. Large quantities of plants and seeds have been distributed to planters. A Government orchard, for supplying fresh fruit and vegetables, has been established at one of the experimental stations, and yields considerable quantities of European fruit-foods.

(iv.) *Indigenous Products.* There are many indigenous plants of great economic value. These comprise sandalwood and other timber trees, sugar-cane, cotton plants, rubber-both, vine, nutmegs, ginger, bamboos, palms, bananas, bread-fruit, edible nuts, sago-palms, fruits, and vegetables.

3. *Live Stock.*—On 31st March, 1913, the live stock in the territory consisted of 483 horses, 10 donkeys, 1727 head of cattle, 109 mules, 99 sheep, 974 goats, 421 pigs, and 10,129 fowls. A Government stud farm has been established for the breeding of horses. Twenty-nine stud mares have been imported. A valuable asset to the stud is the possession of two stallions of good breeding. 31 foals have been dropped at the farm. The introduction of rabbits, foxes, hares, and monkeys is prohibited.

4. *Forest Products.*—There is a large variety of useful timbers in Papua. Of 120 varieties that have been catalogued, 16 are adapted to resisting heavy strains, and are suitable for girders, railway waggons, etc.; 10 for railway carriage and coach building; 15 for joinery, lining, flooring, etc.; 14 for butter boxes; 5 for boat building; 4 for piles; and 15 for cabinet work. Sandalwood is indigenous. It is largely used for cabinet work, and santal oil is distilled from its roots. Ebony is also produced for export. Rubber is a promising industry. There are considerable areas of native rubber (*Ficus Rigo*), but the planters generally prefer the imported Para rubber. Guttapercha is obtained from species of *palaquium*, which grow on the hills. Drugs, dyewoods, and spices are also obtained from indigenous plants. Saw mills have been established, but the output has not been sufficient to supply the local demand for building and other timber, and large quantities of sawn timber have been imported from Australia. About 53,500 feet of timber were exported in 1912-13, valued at £340. Contracts have been made by residents to ship timber to Great Britain.

5. *Fisheries.*—Pearl-shell fishing occupies an important place in the industries of Papua. A considerable number of luggers is licensed, but the returns are mostly credited to Queensland, whose boundary approaches to within a few miles of the Papuan coast. The species of tortoise which supplies the commercial tortoise-shell is also a native of the territory. Bêche-de-mer is found along the shores and reefs. There is a dugong fishery on the coast of the Western Division. The value of fisheries exports in 1912-13 was £20,000.

6. *Mining.*—(i.) *Variety of Minerals.* Minerals have been discovered in many places, and over an extremely wide range. Those discovered so far are—gold, copper, silver, tin, lead, zinc, cinnabar, iron, osmiridium, gypsum, manganese, sulphur, graphite, and petroleum. The discovery of the last named mineral is regarded as important, and steps are being taken to establish the industry. Petroleum of good quality has been secured at Vailala. Of precious stones, only the topaz and beryl have been obtained. Large beds of apparently good coal also exist. A geologist was added to the Government service at the beginning of the year 1911.

(ii.) *Gold.* In 1888 the first gold was discovered. The search has now spread over every division, and finds have been recorded wherever the explorers have gone. Prospecting parties are subsidised by the Government. There are 137 white miners and

761 indentured labourers; the majority of the whites are working the Murna goldfield. The quantity and value of the gold yield for five years are given below:—

GOLD YIELD, PAPUA, 1908-9 to 1912-13.

1908-9.		1909-10.		1910-11.		1911-12.		1912-13.	
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
ozs.	£	ozs.	£	ozs.	£	ozs.	£	ozs.	£
14,710	51,108	16,151	60,181	18,497	68,803	17,047	60,608	18,247	64,115

Most of the rivers, with the exception of those flowing into the Gulf of Papua, have been declared open to gold-dredging, and good yields have been obtained from many of the rivers thus dredged.

The Gold-buyers Ordinance (Ordinance XVIII. of 1909) provides for the issue of licenses to buy gold, and imposes a penalty in respect to the purchase of gold by unauthorised persons. The total quantity of gold won to 30th June, 1913, was 357,831 ounces, valued at £1,291,670.

(iii.) *Copper.* A rich and extensive copper field has been proclaimed, and about 30 square miles of it are being worked. There are indications that the mineral exists over a much wider region. The ore shipments in 1912-13 were the largest since the field was discovered. The total amount shipped to date is 3134 tons, valued at £50,420.

(iv.) *Other Minerals.* Some good samples of galena (sulphide of lead) have been obtained. Small quantities of cinnabar (sulphide of mercury), graphite (or plumbago), osmiridium (or iridosmine), zinc, native sulphur and other minerals are also found.

A mineral laboratory and museum has been fitted up, and is available to prospectors and others interested.

7. Manufactures.—The chief native manufactures are pottery, canoes, fishing nets, mats, shell ornaments, stone implements, and decorated gourds.

§ 6. Statistical Summary.

1. Revenue and Expenditure.—The revenue and expenditure for 1912-13, under principal heads, are given below; also a summary covering a period of five years. In addition to the revenue collected during the year, amounting to £52,335, £39,000 was granted by the Commonwealth Government—£30,000 for ordinary expenditure, £5000 for Government plantations, and £2000 each for new wharfs and new stations. As compared with 1911-12 there were decreases of £4300 in customs receipts, and £1300 in those from the post office. On the expenditure side, increases occurred in all departments, except public works and medical.

REVENUE OF PAPUA, 1911-12.

Customs receipts	£33,453
Post Office	1,916
Native labour fees	1,821
Native hospital fees	512
Mining receipts	1,453
Land leases	1,086
Harbour Dues	1,222
Miscellaneous receipts	10,872
Total	£52,335

EXPENDITURE OF PAPUA, 1911-12.

Lieutenant-Governor and Civil list	£3,090
Government Secretary	38,083
Treasury & Postal Department	8,280
Lands and Agriculture	11,254
Public Works	14,914
Medical	5,103
Department of Native Affairs	2,322
Central Court	1,384
Legislative Council	740

Total £85,170

REVENUE AND EXPENDITURE OF PAPUA, 1908-9 to 1912-13.

Item.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Revenue	27,706	35,918	45,972	51,035	52,335
Expenditure	51,036	64,874	70,699	85,632	85,170

2. **Imports and Exports.**—The value of imports and exports for five years is shewn in the table below. The figures for 1907-8 and 1908-9 evidenced considerable expansion in trade over former years. Those for 1909-10 shewed an advance over 1908-9 of £25,497 in imports, and £20,907 in exports. In 1910-11 imports increased nearly 70 per cent. over the previous year, exports nearly 17 per cent. In the following year the imports increased 16 per cent.; exports decreased 14 per cent. In 1912-13, there was a falling off in imports; but a great expansion, amounting to nearly 30 per cent. over the previous year, in exports.

VALUE OF IMPORTS AND EXPORTS OF PAPUA, 1908-9 to 1912-13.

Particulars.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
	£	£	£	£	£
Imports	94,680	120,177	202,910	235,369	218,323
Exports	79,692	100,599	117,410	99,990	128,016
Total trade	174,372	220,776	320,320	335,359	346,339

The principal articles of import are foodstuffs, which in 1912-13 reached a total value of £67,109. The chief other imports in that year were:—Drapery and clothing, £32,897; hardware and ironmongery, £22,972; building material, £17,828; tobacco and cigars, £12,577; machinery, £17,082; wine, spirits, and beer, £6888; live stock, £5338; oils and kerosene, £5577. The most notable increases over the previous year are:—Machinery, about £8000; and drapery and clothing, £5000. In the years under review gold has formed considerably more than half the value of the total export, except in 1912-13, when it was slightly less than half. In 1912-13 the value of this metal exported reached £62,332. Other principal exports were:—Copra, £16,912; copper ore, £18,997; pearls, £9284; pearl and turtle shell, £8842; hemp, £3039; bêche-de-mer, £1871; rubber, £517.

3. **Postal and Shipping.**—Considerable development has been shewn in means of communication—the postal returns, and the tonnage of vessels entered and cleared at ports, having largely increased. Particulars regarding postal matter are given hereunder:

POSTAL STATISTICS OF PAPUA, 1908-9 to 1912-13.

Year.	Letters.		Packets.		Newspapers.		Parcels.	
	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.	Received.	Des-patched.
1908-9 ...	57,055	51,259	8,608	3,997	48,070	14,320	1,566	467
1909-10 ...	64,357	56,776	8,893	5,575	52,178	21,104	1,351	379
1910-11 ...	84,274	83,617	13,712	8,011	63,170	25,520	2,279	542
1911-12 ...	124,603	97,783	23,433	5,336	88,873	36,107	2,769	949
1912-13 ...	136,585	111,574	23,088	5,338	112,931	37,030	2,935	1,049

The value of money orders issued in 1911-12 was £7449; of those paid, £664. In 1912-13, the respective values were £7166 and £793.

The following table shews the number, tonnage, and nationality of vessels entered and cleared at ports during the years 1908-9 to 1912-13:—

**SHIPPING.—FOREIGN-GOING VESSELS ENTERED AND CLEARED AT PORTS
OF PAPUA, 1908-9 to 1912-13.**

Nationality.		Vessels.									
		Number.					Tonnage.				
		1908-9.	1909-10	1910-11	1911-12	1912-13.	1908-9.	1909-10	1910-11.	1911-12.	1912-13.
British...	...	233	234	246	291	1,721	119,252	123,402	123,461	135,015	182,676
Foreign	...	36	42	55	64	56	104,960	132,884	129,661	140,788	123,802
Total...	...	269	276	301	355	1,777	224,212	256,286	253,122	275,803	306,478

§ 7. Land Tenure.

1. **Method of Obtaining Land.**—(i.) *The Land Laws.* The broad principles upon which the land laws of Papua are based are:—(a) No land can be alienated in fee simple; (b) the rental of the land leased is assessed on the unimproved value of the land, and is subject to reassessment at fixed periods.

A detailed account of the method of obtaining land was given in Official Year Book No. 6, pp. 1083-4.

(ii.) *The Leasehold System.*—With a view of attracting pioneer settlers, an ordinance was passed in 1906 under which leases were granted on very liberal terms. No rent was payable for the first ten years, the heavy expense of survey was borne by the Government, and no charge was made for the preparation and registration of the leases; that is to say, no payments whatever had to be made to the Government for 10 years. Under this system, the area under lease increased in four years from 2089 acres to 363,425 acres; about 140 plantations were started, and nearly 1000 acres planted during that period.

After allowing free survey for three years, it was decided that all future applicants for agricultural leases exceeding in area 100 acres should be required to pay the cost of survey. It was also found desirable to check a tendency amongst a proportion of land applicants to obtain areas so great that the improvement conditions could not be carried out. It was therefore enacted that no leases should be granted after 1st June, 1910, exceeding 5000 acres in extent, and that rent at the rate of 3d. per acre must be paid from the commencement on all leases exceeding 1000 acres in area. As a result of these enactments, several leases have been forfeited. On the other hand, a stricter enforcement of improvement conditions has resulted in a substantial raising of the standard.

2. **Land Tenures.**—On 30th June, 1913, the lands of the territory were held as follows:—

	Acres.			
Area of land held by the natives	...	...	...	56,538,569
Area of Crown land	...	...	...	1,092,800
Area of freehold land	...	...	...	23,295
Area of leasehold land	...	...	...	290,936
Area of territory	...	...	...	57,945,600

Private sales of land in the territory have now practically ceased. The Government buys from the natives, and then leases to planters, who are forbidden to have direct dealings in land with Papuans. The development in leasehold tenures may be seen from the following table:—

TOTAL AREA HELD UNDER LEASE, 1908-9 to 1912-13.

Year ended 30th June.	1908-9.	1909-10.	1910-11.	1911-12.	1912-13.
Land held under lease ... acres (as recorded).	337,803	363,425	364,088	332,422	290,936

In 1912-13, the area of leases granted was 3080 acres; that of leases expired, revoked, and forfeited was 39,171 acres. Further, recent surveys have shewn that applicants for leases in many cases over-estimated the areas; this constitutes a further shrinkage of 5895 acres. Leases of unimproved areas have, after a reasonable time has been allowed in which to make a substantial start in clearing and planting, been forfeited. There has been steady development in agriculture through the adoption of stringent safeguards against purely speculative acquisitions of land. During 1912-13, the area of land acquired by the Crown from the natives was 18,482 acres. Notwithstanding shrinkage in figures quoted, the plantation statistics (see *supra*) indicate that development is rapidly proceeding.

The total area surveyed in the Territory is 22,524 acres of freehold, and 186,450 acres of leasehold.

§ 8. Progress of the Territory.

1. **Statistical View of Seven Years' Progress.**—As already stated (§ 2. *supra*) the territory was placed under Commonwealth control on 1st September, 1906. The following table indicates the progress that has been made since that date:—

STATISTICAL VIEW OF SEVEN YEARS' PROGRESS, 1907-1913.

Subject.	Year ended 30th June.	
	1907.	1913.
White population	690	1,219
Native labourers employed (exclusive of Crown servants) ...	2,000	10,000
Number of white civil servants	65	118
Armed constabulary	185	250
Village constables	401	536
Territorial revenue	£ 21,813	52,335
Territorial expenditure	£ 45,385	85,170
Value of imports	£ 87,776	218,323
Value of exports	£ 63,756	128,016
Area under lease acres	70,512	290,936
Tonnage of ocean-going vessels entered and cleared at ports ...	159,177	306,478
Area of plantations acres	1,467	35,363
Meteorological stations established	3	18
Gold yield ounces	16,103	18,247
Copper ore shipped tons	137	1,285
Live stock in territory—		
Horses	173	*483
Cattle	648	*1,727
Mules	40	*109

* On 31st March, 1913.

SECTION XXX.

PUBLIC HYGIENE.

1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the one relating to that subject. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has recently received an increased amount of attention both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce these powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905, the Quarantine Acts 1908 and 1912, and the Customs Act 1910, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. All these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, contagious diseases, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

§ 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is carried on either a Central Board or a Commissioner of Health under Ministerial control while their actual execution is imposed on local Boards of Health or on the local authorities constituted under the various Local Government Acts. Ordinarily the Central authority

has general supervisory powers over local Boards and authorities, and also has power to act in case of default by or in the absence of a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The Central authority may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. Generally it may be said that the chief functions of the Central Health authorities are:—(a) the collection and dissemination of useful information relating to health and the prevention of disease, and (b) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including:—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

2. New South Wales.—The Department of Public Health is controlled by the Director-General of Public Health, and consists of various staffs—medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical.

The work of the Department, briefly put, embraces all matters relating to public health and the general medical work of the Government; the Director-General of Public Health also holding the position of Chief Medical Officer of the Government. Its operations extend over the whole of the State.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board of Health. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts:—Public Health Act 1902, Dairies Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Sydney Abattoir and Nuisances Prevention Act 1902, Pure Food Act 1903, and Private Hospitals Act 1908. The Board further possesses certain powers connected with public health matters under the Local Government Act 1906.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums, and the various public hospitals throughout the State which receive subsidies from the Government.

It may be mentioned that the Board of Health is a nominee Board, created in 1881 and incorporated in 1894. The permanent head of the Department is the Under-Secretary of the Chief Secretary's Department.

The Department also controls, on behalf of the Federal Government, the meat export trade of the State. A veterinary inspector is in charge, and has assisting him an assistant veterinary inspector and thirty-five qualified meat inspectors stationed at Glebe Island and at various slaughter-houses throughout the State.

3. Victoria.—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (a) the medical inspector, who is also chairman, (b) two assistant medical inspectors, (c) two engineering inspectors, (d) three building inspectors, and (e) nine health inspectors. The main function of the Board is to enforce the execution of the Health

Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspections as to the sanitary condition of various districts and the sampling of articles of food. The supervision of the sanitary condition of the milk supply is under the Dairy Supervision Branch of the Department of Agriculture. Acts administered by the Department of Public Health are:—The Health Acts, the Cemeteries Acts, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts, and the Pure Food Act 1905.

4. Queensland.—The Public Health Acts 1900 to 1911 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, an assistant-health officer, a medical inspector for North Queensland, a secretary and five clerks, nine sanitary inspectors, and six food inspectors, in addition to rat squads in Brisbane and the main outposts, and a mosquito squad for the Brisbane metropolitan area. A northern office, in charge of the medical inspector for North Queensland, is located at Townsville. A laboratory of microbiology and pathology, in charge of a medical director, is controlled by the Department, and performs a wide range of microbiological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or to compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Health Act of 1911, which, *inter alia*, enables definite action to be taken against mosquitoes, rats, and other noxious vermin liable to spread disease.

A scheme for the limitation of venereal disease in the metropolitan area has been recently put into operation in Brisbane under statutory powers. It includes compulsory notification, free treatment, and the free supply of salvarsan and allied remedies to all public hospitals. Compulsory segregation of venereally infective persons of either sex may be effected on occasion.

5. South Australia.—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 180 of these local Boards under the general control and supervision of the Central Board. A chief inspector and two inspectors under the Health, Food, and Drugs Acts, periodically visit the local districts and see generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), who, in company with an analyst, visits country districts, and takes samples of milk, which are analysed on the spot. There are two nurse inspectors employed in advising and assisting local Boards in connection with outbreaks of infectious diseases. In the outlying districts there are eleven inspectors directly responsible to the Board. The Education Department has a medical officer and two female inspectors, who deal with all cases of infectious disease occurring in schools, while their appointments under the Health Act enable them to trace cases of such disease, and deal, if necessary, with the sanitary state of the children's homes.

6. Western Australia.—The legislation in this State is The Health Act 1911, with two Amending Acts 1912. The central authority is the Department of Public Health, controlled by a Commissioner, who must be a qualified medical practitioner. The local authorities constitute:—(a) Municipal Councils, (b) Road Boards which may be appointed as such, (c) Local Boards of Health, composed of persons appointed by the Governor for a certain period. These Local Boards are only utilised where neither Municipal Councils nor Road Boards are available. Generally speaking, the Act is administered by the local authorities, but the Commissioner has supervisory powers, also power to compel local authorities to carry out the provisions of the Act. In cases of emergency the Commissioner may exercise all the powers of the local health authorities throughout the State.

All the usual provisions for public health legislation are contained in the Act, and in addition, provision is made for the registration of midwifery nurses, and the medical examination of school children.

7. Tasmania.—The Public Health Act 1903 vests central control in the Chief Health Officer, who is the permanent head of the Department of Public Health. He is charged with very wide functions and powers, and in the event of the appearance of dangerous infectious disease (smallpox, plague, etc.) in the State, is vested with supreme power, the entire responsibility of dealing with such an outbreak being taken over by him from the local authorities. Local executive is vested in local authorities, who possess all legal requirements for the efficient sanitary regulation of their districts. Controlling and supervisory powers over these bodies are possessed by the Department of Public Health, whereby many of the powers conferred upon them may be converted into positive duties. One function of the Department is to advise local authorities on matters pertaining to the Health Act, and, where necessary, to rectify sanitary evils produced by local inefficiency or apathy. The department has four full-time inspectors, who assist and instruct the local sanitary inspectors, but full-time district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

§ 3. Inspection and Sale of Food and Drugs.

1. Introduction.—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported, or which are entered for export.

2. Commonwealth Jurisdiction.—Under Section 51 (i.) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Commerce (Trade Descriptions) Act 1905, and the Customs Act 1910, to which reference has already been made in another part of this book (see pp. 513, 514), were passed.

3. State Jurisdiction.—The inspection and sale of food and drugs is also dealt with in each State, either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts.

(i.) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing the cleanliness of receptacles, places, and vehicles used for their manufacture, storage, or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also are the mixing or selling of food or drugs so as to be injurious to the health. A more detailed account of the various State Acts and of their administration and enforcement is given in previous issues of the Year Book (see No. 6, p. 1090).

(ii.) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which

are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(iii.) *Advisory Committees.* In New South Wales, Victoria, and South Australia Advisory Committees have been appointed for the purpose of prescribing food standards and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

4. Food and Drug Standardisation.—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. In June, 1913, a second conference of the principal Health Officers of the Commonwealth and States was held in Melbourne. Emphasis was laid on the importance of fixing uniform standards throughout the Commonwealth for food and drugs, and of also securing uniformity of administration of the laws relating thereto. It was also urged that, as the uniform enforcement of standards throughout the Commonwealth depends to a great extent on the methods of analysis, the Commonwealth and State analysts should prepare standard methods for determination of the chemical standards adopted. The resolutions of the conference were submitted to the Premiers' Conference held in Melbourne in March, 1914, when it was determined to introduce uniform legislation or regulation with respect to the preparation and distribution of food and drugs.

§ 4. Milk Supply and Dairy Supervision.

1. Introduction.—Milk is pre-eminently the food which needs most careful protection at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i.) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts is left to the local authorities.

ii.) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registrations must be applied for before commencing to trade; in other States they must be applied for within a specified time after the premises are first used.

(iii.) *Inspection of Premises.* Dairy inspectors employed by the central departments traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions and ventilation of premises, and as to the care and health of dairy cattle. If an inspector

is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

(iv.) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v.) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

2. Number of Dairy Premises Registered.—The following table shews the number of dairy premises registered and the number of cattle thereon in each State during the year 1912-13:—

NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1912-13.

Particulars.		*N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.*	Tas.
Premises registered	...	18,524	14,365	12,021	918	298	856
Cattle thereon	...	631,576	147,857	336,154	6,970	4,686	11,663

* New South Wales for 1911-12, Western Australia for calendar year 1913.

3. New South Wales.—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions of this State and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required, under penalty, to apply for registration to the local authority for the district in which he resides, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually.

4. Victoria.—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle, and grazing grounds are provided for by the Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, to institute prosecutions in case of adulterated or unwholesome food, and to carry out inspection of dairies, etc., in districts not yet proclaimed under the Act. By the end of the year 1913, 108 municipal districts, comprising about one-fourth of the area of the State, had been brought under the operation of the Milk and Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental execution.

5. Queensland.—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1911, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed

districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border, and the Darling Downs, Maranoa, Mackay, and Cairns districts.

6. South Australia.—The Food and Drugs Act 1908, and the Regulations made thereunder (published in May, 1910), provide for the licensing of vendors of milk and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the country, the majority of local authorities have not made statutory provision for the licensing of vendors of milk and the registration of dairy premises; and, in consequence, the Central Board of Health provides for such under the Act. Reference has already been made (see § 3, 5 hereof) to the constitution of the Metropolitan County Board.

7. Western Australia.—Control of dairies throughout the State is in the hands of the Public Health authorities under the provision of the Health Act. The inspectors under the Act supervise all sanitary conditions of the premises, the examination of herds being carried out by officers of the Department of Agriculture. This inspection of herds is regularly done, and in the case of such animals as arouse suspicion, the tuberculin test is applied. Regular inspection of premises from a sanitary point of view is also maintained.

8. Tasmania.—Local authorities are responsible for the dairies in their respective districts. By-laws for the registration and regulation of dairies have been drafted by the Public Health Department, and in the majority of cases have been adopted by the local authorities. By the Food and Drug Act, which came into force March, 1911, milk sampling is carried out by the local authorities. During 1913, attention was drawn by circular to the requirements of local authorities with regard to dairies, and a special report is now required before licenses are granted.

§ 5. Prevention of Infectious and Contagious Diseases.

1. General.—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. Quarantine.¹—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. An amending Quarantine Act was passed in 1912, correcting certain imperfections in the original Act, and conferring additional powers. As far as is at present practicable, uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to interstate movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of interstate quarantine of animals and plants is left in the hands of the States.

(i.) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Colnslie and Lytton (near Brisbane), Magnetic Island (near Townsville) and Thursday Island. (d) *South Australia.* Torrens Island (near Adelaide). (e) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

1. From information furnished by the Federal Director of Quarantine.

(ii.) *Administration of Act.* Co-operation between the Commonwealth and State authorities is secured as far as practicable in the administration of the Act, arrangements having been made by which, under the Director of Quarantine, the State Health Departments of Western Australia and Tasmania administer in those States the division of the Act relating to vessels, persons and goods (general quarantine), the Chief Medical Officer of the Department in each case acting as chief quarantine officer. Payment is made for these services to the State Government. In New South Wales, Queensland, and South Australia, this division of the Quarantine Act is administered by a Commonwealth medical chief quarantine officer, while in Victoria, where the Central Administrative Office is situated, this division is directly administered by the Director of Quarantine. The administration of the Acts and regulations relating to oversea animal and plant inspection and quarantine is also carried out by the officers of the State Agricultural Department acting as quarantine officers. Power to take action for the prevention of the spread of disease within a State still remains in the hands of the State, and as the functions of the Commonwealth and State may be exercised at the same time, the advantage of co-operation is apparent.

(iii.) *Chief Provisions of Act.* The Act provides for the inspection of all vessels from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases are defined as small-pox, plague, cholera, yellow fever, typhus fever, leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General by proclamation to be a disease affecting plants." The term "plants" is defined as meaning "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv.) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected, or as places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; and fix the quarantine lines in certain ports of Australia.

(v.) *Regulations.* Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantine animals; the conditions of importation of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages. Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi.) *General.* The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south and west are now examined only at the first port of call and pratique is given for the whole of the Commonwealth, except in cases of suspicious circumstances,

while vessels arriving from the northern routes are examined only at the first and last ports. It is expected that the restrictions placed upon oversea vessels will be further removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world, would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. Notifiable Diseases.—Provision exists in the Health Acts of all the States for precautions against the spread and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter body. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and on his default on the person in charge of or in attendance on the patient, and on his default on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

(i.) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross:—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE.

Particulars.	N.S.W.	Vic.†	Q'land.	S.A.	W.A.‡	§Tas.
Anthrax ...	...	+	...	+	...	...
Ankylostomiasis ...	...	...	+	...	...	...
Beri-beri ...	...	...	...	...	+	...
Bubonic plague ...	+	+	+	+	+	+
Cerebro-spinal fever ...	...	...	...	...	...	...
Cerebro-spinal meningitis ...	...	+	+	+	+	...
Cholera ...	...	+	+	+	+	+
Continued fever ...	...	...	...	...	+	+
Diphtheria ...	+	*	+	+	+	+
Dysentery ...	...	...	+	...	...	...
Enteric fever ...	...	*	+	+	+	+
Erysipelas ...	...	...	+	+	+	...
Gonorrhœa ...	...	...	+	...	...	...
Infantile Paralysis ...	+	+	...	...	...	+
Leprosy ...	+	+	++	+	+	+
Malarial fever ...	...	...	...	+	+	...
Measles ...	...	+	...	...	...	...
Membranous croup ...	...	...	+	+	+	...
Ophthalmia neonatorum ...	...	...	...	...	+	+
Poliomyelitis anterior acuta ...	+	+	...	...	...	+
Puerperal fever ...	...	*	+	+	+	+
Pulmonary tuberculosis(phthisis) ...	...	...	+	+	+	...
Relapsing fever ...	...	*	+	+	+	+
Scarlet fever ...	...	*	+	+	+	+
Scarlatina ...	...	+	...	...	+	...
Septicæmia ...	...	+	+	+	+	+
Small-pox ...	+	+	+	+	+	+
Syphilis ...	...	...	+	...	...	...
Trichinosis ...	...	...	...	+	...	...
Typhoid ...	+	*	+	+	+	+
Typhus fever ...	...	+	+	+	+	+
Whooping cough ...	...	+	...	...	...	...
Yellow fever... ..	...	+	+	+	+	+

‡ Those diseases marked with an asterisk in this column have been declared notifiable diseases, while those marked by a cross have been declared "dangerous infectious diseases" under the Public Health Act 1890, and when prevalent in any municipal district may be declared notifiable diseases within such district. † Other diseases enumerated as notifiable under 'The Health Act 1911' of this State are bilharzia hæmatobia, pyæmia, and Malta, dengue, low and Colonial fevers. § Thursday Island area only. ** Metropolitan area of Brisbane only. ‡ Under the Leprosy Act 1892. § Chicken-pox has been declared a notifiable disease to render certain its differential diagnosis from Small-pox.

(ii.) *Duties of Authorities.* As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(iii.) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part VII. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Many improvements have been effected by the Sydney Harbour Trust (see Section XXVI. hereof, page 891) with a view to generally improving the hygienic condition of the area under its control, and especially with the object of preventing the introduction of bubonic plague. Special reports dealing with the etiology of outbreaks of plague have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v.) *Queensland.* Under Part VII. of the Health Act 1900, all cases of infectious diseases must be notified; special provision is made for notification of cases of phthisis and small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi.) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii.) *Western Australia.* Regulations made under the Health Act 1898 provide for the compulsory notification to local Boards of infectious diseases. The local Board must report to the Central Board. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected.

(viii.) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. **Vaccination.**—In the State of New South Wales there is no statutory provision for compulsory vaccination, though such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The Calf Lymph Depot of the State of Victoria was transferred to the Commonwealth in October 1911. It is now designated "The Commonwealth

Vaccine Dépôt' and is under the control of the Director of Quarantine. Lymph is prepared in this dépôt to meet the requirements of the Quarantine Service and of all the States. A considerable demand exists for lymph in the State of Victoria, where infantile vaccination is compulsory, but in the other States the normal requirements are small. During the quarter July to September, 1913, more than 500,000 doses of lymph were issued from the dépôt. This output was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, this being followed by large numbers of vaccinations in each State. The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1908 to 1913 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1908 to 1913.

Year.	N.S.W.*	Victoria.†	Q'land.	S. Aust.	W. Aust.	Tasmania.
1908	42	20,924	†	1,502	616§	†
1909	11	21,344	†	1,477	†	†
1910	280	21,575	†	1,800	†	†
1911	20	20,562	†	1,431	†	†
1912	...	21,548	†	†	†	†
1913	520,000	24,562	33,500	†	12,000	3,204

* By Government medical officers only. see (ii.) below. † Returns not available. during year 1908-9.

‡ Children only, who were vaccinated under the Act. § Notifications of vaccinations to district registrars

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. A fee is paid, and free lymph is provided. The large number of vaccinations in 1913 was due to an epidemic of small-pox in New South Wales, 1069 cases of the disease being recorded.

(ii.) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided. As a result of the small-pox epidemic in New South Wales it is estimated that, exclusive of the vaccinations of children given in the above table, about 40 per cent. of the adult population were vaccinated or re-vaccinated in 1913.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act. In the early part of 1912, the Queensland Government sent a medical expedition to the islands in Torres Straits. Over 1200 natives were vaccinated with a view to reducing the risk of the introduction of small-pox from New Guinea. As a result of the small-pox epidemic in Sydney, approximately 33,500 people were vaccinated in Queensland during 1913.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. Under the Health Act 1911, however, a "conscientious objection" clause was inserted, which is availed of by the majority of parents, so that the number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fee for vaccinations. Owing to the outbreak of small-pox in Sydney during 1913, it is estimated that not less than 12,000 children and adults were vaccinated in that year.

(vi.) *Tasmania.* All infants in Tasmania are nominally required, under the Vaccination Act 1898, to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. The Act has not been enforced, and up to June, 1913, practically no vaccination of infants had been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. During that year 24,857 were vaccinated in Tasmania. In 1913, owing to the outbreak of small-pox in New South Wales, there were 3204 cases of vaccination by public vaccinators.

§ 6. Transmission of Disease by Mosquitoes.

1. *Introduction.*—The remarkable development of parasitology in recent years and the increase in knowledge of the part played by parasites in human and animal diseases have shewn that the difficulties in the way of tropical colonisation, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene, which science has accomplished, lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth.

2. *Queensland.*—The existence of filariasis in Queensland was first discovered some thirty-three years ago. The parasite of this disease (and probably of dengue fever also), is transmitted by *Culex fatigans*, the mosquito most prevalent in Queensland. The *Stegomyia fasciata*, conveyer of yellow fever, is another common domestic mosquito throughout Eastern Queensland during the summer, but so far has never been infected from abroad. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. For many years several efforts were made to deal with the mosquito question in the larger centres, but, owing to the absence of the statutory powers, these had only limited success. Special provisions of the Health Act Amendment Act of 1911 remedied this defect, and extensive operations, involving oiling, drainage, tank screening, the use of larvivorous fish, and other measures have been organised by the Department of Public Health. The metropolitan local authorities contributed £420 towards the undertaking for the first year. Some 50,000 square yards of natural breeding places are attended to weekly by a special mosquito squad, over 2000 street gullies are oiled, and tank screening with fine wire gauze is being steadily enforced on owners and occupiers. The work is continued through the winter, in order to reach the eggs and larvæ at their period of lowest vitality. The Department's inspectors have also received a course of training in insect destruction, with a view to enabling the introduction of yellow fever or other insect-borne epidemic disease to be promptly and effectively met.

3. **Northern Territory.**—While the Territory is conspicuously free from most of the diseases which cause such devastation in other tropical countries, a certain amount of malaria exists, and, although no deaths can be attributed to this disease during 1912, the Administrator is taking measures for the destruction of mosquito larvæ wherever settlements or permanent camps are formed, while precautions are being taken to prevent the collection of stagnant water in such localities.

4. **Other States.**—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filaria has not been discovered at all. No mosquito-borne diseases are known to exist in Victoria, South Australia or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States, both by municipalities and private individuals.

§ 7. Supervision of Infant Life.

It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration, the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk Institutes have also been established after the manner of the *Gouttes de Lait*¹ in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 169) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1913, classified according to metropolitan and other districts in each State:—

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1913.

Districts	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,635	1,335	415	499	347	107	4,338
Other ...	2,424	1,202	835	384	301	309	5,462*
RATES OF INFANTILE MORTALITY.†							
Metropolitan	78.90	76.48	78.98	78.49	83.93	80.81	78.52
Other ...	77.04	64.70	57.67	61.24	59.20	67.73	67.87

* Including 7 in Commonwealth territories.

† i.e., the number of deaths of infants under

one year of age per thousand births.

1. Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait*." The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

It may be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the above table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Industrial Legislation* (Section XXVII.). Certain particulars have also been given in Section XXIV. (pages 821 to 823) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. In previous issues of this book a short account has been given of the principal Acts which have been passed in each State dealing with the subject of child-life, and of the principal functions of the States' Children's Departments. (See Year Book No. 6, p. 1101).

§ 8. Medical Inspection of State School Children.

1. Introduction.—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained.

Several limited and isolated surveys of the physical proportions of Australian children have been made during the past 30 years in the various States. The first important systematic survey, however, was made in Sydney in 1901, and the results were reported by the Government Statistician of New South Wales to the Australasian Association for the Advancement of Science Conference in Hobart in 1902, and shewed that the Sydney boy was taller than the English boy, but that his chest expansion was small in comparison with European figures.

A series of measurements on 500 boys took place concurrently but independently in Hobart during 1901, which also gave similar results. It was recognised that the figures were based on limited numbers, but they at least challenged attention. The 1901 survey in Sydney, though small, was a valuable and suggestive contribution to anthropometric research in Australia, and may be regarded as the beginning of a systematic attempt to ascertain what characteristics of bodily form are exhibited in Australia. This inquiry roused considerable interest in the other States, and series of measurements have since been made in Western Australia, Tasmania, and South Australia, by various authorities, and in Victoria by the Education Department's medical officers. Each year since 1907 the Department of Education of New South Wales has carried out regular anthropometric measurements of the height and weight of school children, and now possesses records of about 90,000 children, the results being detailed in the Department's annual reports. A card for each child allows his measurements for successive years to be recorded. The department perambulated the apparatus, each set serving about 20 schools, and the visits recur in the same month of each succeeding year.

2. **Co-ordination of Effort.**—So far as it has been carried out, the medical inspection of school children goes to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. With a view to securing uniformity of procedure in the several States the Commonwealth Government in 1907 formulated a scheme and communicated with the States asking their co-operation in obtaining measurements of school children with a view to establishing the relations between age, weight and height, chest measurement, etc. Delays occurred from various causes, but in a paper read at the Science Congress in Sydney in 1911, the subject was again brought under notice, and this led to the appointment by the congress of a committee of experts to encourage anthropometric research and to consider the organisation of a systematic survey of school children throughout Australia. The scheme was essentially identical with the former proposal of the Federal Government, but in the interim the report of the British Anthropometric Committee became available, thus making possible a method uniform with that of Great Britain, and making the results immediately comparable with those of Europe.

The Australian Anthropometric Committee has drawn up a memorandum setting forth the importance and object of the survey, and suggestions as to method for the use of teachers, physical trainers and others interested.

A description of the proposed survey will be found in previous issues of the Year Book (see No. 6, p. 1104).

On the coming into operation of the Defence Act of 1910, military training became compulsory in the Commonwealth, and advantage has been taken of the prescribed medical examination to make a systematic record of the height, weight and chest measurement of each trainee. There can be no doubt that these anthropometric records will in time furnish valuable data for the study of Australian physical development. Further reference is made to this subject in the section dealing with "Defence."

3. **New South Wales.**—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. Two inspectors were appointed for the first year's work, and a third in March, 1909.

In 1913, the scheme of school medical inspection was re-organised so as to embrace every pupil in the State whose parents desired such medical inspection of their children. The employment of part-time Medical Officers was discontinued, and a staff consisting of a Principal Medical Officer and nine full-time Medical Officers was appointed. It was decided to extend the medical inspection of school children to such non-State schools as were agreeable. To cope with this extra work, two additional full-time Medical Officers were added to the staff at the end of the year. Attached to the staff are also five school nurses and six clerks. The work now being carried on by the Medical Branch may be classified under the following heads:—

- (1) The medical inspection of all school children (except about 10,000), in the State, whether attending public or non-State schools;
- (2) The investigation of epidemics of infectious diseases affecting school children;
- (3) Inspection of school buildings;
- (4) Delivering of systematic courses of lectures at the training college;
- (5) Delivering lectures to the senior girls in all metropolitan schools on the care of babies, personal cleanliness, home hygiene, sick nursing, etc.;
- (6) Delivering lectures to parents;
- (7) The medical examination of candidates for admission to the teaching service;
- (8) Giving first treatment in the back country schools to the eyes of scholars suffering from ophthalmia, and instructing the children and parents regarding future treatment and prevention;

also supplying those children with sufficient drugs to carry on the treatment; (9) Visiting the parents of defective children by nurses to better secure the treatment of those children.

Owing to the staff being employed in vaccinating some 24,000 scholars and teachers during the small-pox epidemic in Sydney, the inauguration of the new scheme was delayed. During the few months in which the scheme was in operation, 25,638 children were examined, of whom 15,135, or 59 per cent., shewed defects needing treatment. Of these the principal were adenoids and enlarged tonsils, and defects in teeth and vision.

4. **Victoria.**—In Victoria three medical inspectors have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. An Advisory Committee was also appointed to formulate a scheme of medical inspection, which it is proposed to extend to all State schools in Victoria. During the year 1909-10 the chief work of the inspectors consisted in carrying out a preliminary investigation of the health of the pupils in various schools in town and country. During the year ending 30th June, 1911, many of the ideas and intentions outlined in the previous Annual Education Report were initiated, and the foundation laid for a proper and systematic scheme of medical school instruction in future. In the year 1912-13, 12,439 children were examined, of whom 9676 were attending elementary schools. The following table shews the defects and their percentage amongst Victorian boys and girls in the elementary schools examined:—

VICTORIA.—NUMBER AND PERCENTAGE OF DEFECTS IN SCHOOL CHILDREN, 1912-13.

Number of Children Exam'd.	PARTICULARS OF DEFECTS.												
	Vision.	Hearing.	Nose and Throat.	Dental.	Hair.	Deformities.			Lungs.	Heart.	Anæmia.	Skin.	Hernia.
						Chest.	Shoulders.	Lateral Curvature.					
NUMBER SUFFERING FROM DEFECTS.													
Boys 4962	582	815	1,156	2,620	98	3	24	17	3	33	119	40	52
Girls 4805	542	342	748	2,229	1,300	1	69	18	4	47	96	45	3
Total 9767	1,124	1,157	1,904	4,849	1,898	4	93	35	7	80	215	85	55
PERCENTAGE ON TOTAL NUMBER EXAMINED, SUFFERING FROM DEFECTS.													
Boys 4962	11.7	16.4	23.3	52.8	2.0	0.1	0.5	0.3	0.1	0.7	2.4	0.8	1.0
Girls 4805	11.3	7.1	15.6	46.4	27.0	0.1	1.4	0.3	0.1	0.9	2.0	0.9	0.1
Total 9767	11.5	11.8	19.5	49.6	14.3	0.1	0.9	0.3	0.1	0.8	2.2	0.9	0.5

5. **Queensland.**—In this State a systematic scheme for the inspection of State school children has recently been prepared and came into operation on 1st January, 1911, under which a Medical Branch of the Department of Public Instruction was created, consisting of a Medical Inspector of Schools, a School Nurse, and a Dental Inspector. To this

staff have been added an Ophthalmic Inspector and two assistant Dental Inspectors. There are in addition five part-time Medical Inspectors. Under the present scheme the children are examined and if found defective, notices are sent to the parents. The children are treated either by their own doctors, or if they cannot afford private treatment, at the hospital. During the year 24,499 examinations were completed. The medical examinations numbered 7856, 2570 being in connection with diphtheria outbreaks; of the remainder, about 32 per cent. received notices referring to physical defects requiring medical attention.

While adenoids appear to be the principal defect throughout all the State schools, the children in the Northern and Western districts suffer largely from defective vision and trachoma. The work of the Ophthalmic Inspector is chiefly confined to these districts. In Cairns and Townsville several cases of ankylostomiasis and anæmia (probably due to the same disease) were found. The report of the Dental Inspector, while still disclosing an appalling percentage of defects in the teeth of the children, shews, even in the short time in which the scheme has been in existence, a marked improvement in the schools that were examined twelve months previously.

In the reports the relation between educational progress or intelligence and physique and nutrition is shewn under the three degrees of comparison, indicated by the words "Good," "Fair," and "Poor." In the following tables the figures given are for 1850 children, being the total examined in five schools:—

QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN AND PHYSIQUE AND NUTRITION, 1912.

Intelligence.	Number Examined.	Physique.			Nutrition.		
		Good.	Fair.	Poor.	Good.	Fair.	Poor.

NUMBER OF CHILDREN.

Good	...	1,329	786	444	99	866	333	130
Fair	...	460	177	204	79	256	132	72
Poor	...	61	22	29	10	34	16	11
		1,850	985	677	188	1,156	481	213

PERCENTAGE ON NUMBER EXAMINED IN EACH CLASS.

Good	...	1,329	59.14	33.41	7.45	65.16	25.06	9.78
Fair	...	460	38.48	44.35	17.17	55.65	28.70	15.65
Poor	...	61	36.06	47.54	16.40	55.74	26.23	18.03
		1,850	53.24	36.60	10.16	62.49	26.00	11.51

The children examined were also classified according to "intelligence" and "physical condition." This classification is shewn in the following table, and it may be observed that the columns marked with a (x) indicate conditions which are alleged to interfere seriously with the child's school progress. In this table "deafness" does not include the deafness accompanying adenoids, nor does "physical defects" include such as are incidental to adenoids. Excluding the first and last columns, the figures in the table represent individual defects, not individual children.

QUEENSLAND.—RELATION BETWEEN INTELLIGENCE OF SCHOOL CHILDREN AND PHYSICAL CONDITION, 1912.

Intelligence.	Number Examined.	Adenoids.			Defective Vision.*		Deafness.*	Weak Hearts.	Enlarged Glands.	Anemia.	Physical Defects.	Mental Deficiency.
		x Marked.	Slight.	Re- moved.	x 12 or worse.	%						

NUMBER OF DEFECTS.

Good ...	1,329	174	458	133	46	51	41	34	336	33	508	0
Fair ...	460	121	157	51	15	21	20	26	180	36	232	0
Poor ...	61	28	12	6	4	3	4	4	29	13	35	5
	1,850	326	627	190	65	75	65	64	545	82	775	5

PERCENTAGES OF NUMBER OF DEFECTS ON CHILDREN EXAMINED.

Good ...	1,329	13.09	34.46	10.01	3.46	3.84	3.09	2.56	25.28	2.48	38.23	0.0
Fair ...	460	26.96	34.13	11.09	3.26	4.57	4.34	5.65	29.13	7.82	50.43	0.0
Poor ...	61	45.90	19.67	9.84	6.56	4.92	6.56	6.56	47.54	21.31	57.37	8.03

* Normal hearing is assumed to be susceptible to an ordinary whisper over a distance of eighteen feet and is represented by the denominator of a fraction, while its numerator indicates to what this distance has to be reduced in order that the whisper may become intelligible. Visual condition or vision is similarly represented by a fraction, the denominator of which represents the distance in metres (a metre being approximately forty inches) at which normal vision would clearly distinguish an object, while the numerator indicates the reduction in distance required ere the patient attains clear effortless visual perception. Thus it would mean that a person whose eye test was represented by that fraction, could only see an object at six metres distance, which had he possessed normal vision he would have seen at a distance of twelve metres. Normal vision, which is generally tested by Snellen's ordinary test type, is represented by the fraction $\frac{12}{6}$.

6. **South Australia.**—South Australia is now the only State which has no medical supervision of its school children, but provision has now been made on the estimates for a medical officer, a dental officer, and two trained nurses. In 1909, at the desire of the Government, Dr. Rogers examined 1000 school-going children in different parts of the State. No children under seven years nor over 15 years of age were examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the report was presented to the Minister for Education in September, 1910, the results being, on the whole, satisfactory. A summary of this report, which contains statistical details exhibiting many interesting comparisons between various States in the Commonwealth and other parts of the world, was given in the previous issue of this book (see vol. No. 5, pp. 1132 to 1138).

7. **Western Australia.**—Until the year 1911, no general scheme for school medical inspection existed in Western Australia, although examination in a few metropolitan schools had been intermittently carried on. During the latter part of 1906 and the first half of 1907 an extended examination of about 3300 children was conducted by the Department of State Medicine and Public Health with the co-operation of the Education Department. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school, the teacher bringing up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the

necessity of obtaining treatment for the defect. Under the Health Act 1911, Medical Officers of Health become medical officers of schools and school children, and during 1912, taking Government and Private schools together, 135 out of 668 schools were medically inspected, while out of 48,423 children, 11,369 were examined, or about 23.5 per cent. From the figures at present available it appears that about 71.5 per cent. of the children examined were reported as in some way defective, most of the defects being connected with the teeth. Excluding dental defects and uncleanness, the number reported as defective is about 9 per cent.

In the Metropolitan District the members of the Dental Society have carried out a regular system of examination of children's teeth. In connection with this, and also in connection with the general system of medical inspection, free treatment is provided for those children whose parents are unable to pay.

8. **Tasmania.**—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1200 children attending schools in Hobart were inspected in 1906. The general examination was based upon that of the Royal Commission on Physical Training (Scotland) of 1903, but considerable modifications and adaptations were found necessary in order to fit it to immediate requirements. No attempt was made to secure anthropometric observations beyond those of unquestionable medical value, and in only one case (colour of eyes) were any purely anthropological data collected. The sociological data obtained (parental occupation, etc.) were found of much service, and produced some interesting comparative results.

Medical inspection of school children as now existing in Tasmania is carried out by three medical officers, each controlling respectively one of three areas, which for medical inspection purposes are known as Hobart District, Launceston District, and the Country Districts of the State. Additional assistants in the persons of school nurses have been appointed to follow up the work of the Medical Inspectors. Reports on the physical condition of the children are furnished, and parents advised when medical attention is considered necessary, and in the case of parents unable to pay for such attention, orders are given for free treatment at the hospital. During 1912, 2350 children were examined by Dr. Ormiston, who found advanced adenoids and enlarged tonsils affecting 7.4 per cent., defective sight 4.8 per cent., and defective hearing 2.5 per cent. of the children; while Dr. Clark out of 2108 children found that 485, or 23 per cent., were suffering from various defects to an extent requiring medical treatment in order to fit them for their educational studies. Of these 485 children 174 had severe eye defects, and 136 were suffering from advanced adenoids. Out of the 2350 children examined by Dr. Ormiston 11 were found to be mentally deficient in the true sense of the term, while 8 others, though regarded as practically bordering on that condition, were described as unable to profit much by ordinary school methods. With regard to dental condition, all the Medical Inspectors agree that the teeth of the children of Tasmania seem to be uniformly bad.

SECTION XXXI.

THE COMMONWEALTH SEAT OF GOVERNMENT.

1. **Introductory.**—In Year Books Nos. 4 and 5 information was given in this section as to the events leading to the selection of the Federal Capital Territory, and as to the necessary legislation and the progress of operations in connection with the establishment of the capital city. The physiography of the Territory was dealt with *in extenso*, and topographical and contour maps accompanied the letterpress, as well as reproductions of the premiated designs for the laying out of the city. Considerations of space, however, preclude the repetition of this information.

2. **Progress of Work.**—The design for the laying out of the capital city having been approved, the ground survey is being proceeded with. The work of laying the water supply pipes from the service reservoir at Mt. Stromlo is in active progress. The clearing operations at the Cotter River for the dam site are nearly completed, while the excavation for the service reservoir, at Red Hill, is practically complete.

The construction of the power house and buildings is approaching completion.

A preliminary brick-making plant has been established, and the construction, metalling and gravelling of 16 miles of road from the City to the junction of the Cotter and Murrumbidgee Rivers have been completed.

The following figures indicate the actual work done in road development during the last two years:—

Forming and finishing ...	...	...	...	...	80 miles
Gravelling and metalling ...	...	...	...	...	58 miles
Clearing out, repairing culverts, etc. ...	...	...	...	...	160 miles
General road repairs ...	...	...	...	...	147 miles
Cutting water tables, drains, etc. ...	...	...	...	...	111 miles
Cotter-road formation ...	...	...	...	...	6 miles

Considerable headway has been made in the construction of the Hospital, while the Railway Timber Store is completed and ready for use.

3. **Lands in the Territory.**—As a considerable portion of the Commonwealth lands within the Territory is not required in connection with the establishment of the city, such areas are being made available for leasing under certain conditions. Leases of a purely temporary character will be granted for certain business and residential allotments on the site of the capital city. A scheme is under consideration for subdividing and leasing land outside the City area. It has been decided to lease such lands as are not at present affected by the City development for longer periods than the yearly leases previously authorised, and accordingly alternative tenders are being invited in such cases for two or five-year leases, tenants for the longer period being required to exterminate rabbits, boundary netting being provided by the Commonwealth Government. Reference has already been made on page 274 to the area of alienated, acquired and leased land within the Territory. In this connection it may be added that the precise area of the Territory cannot be accurately determined at present, pending the completion of the survey of the boundary between the Territory and New South Wales.

4. **Lands at Jervis Bay.**—A Bill to provide for the transfer to the Commonwealth of sovereign rights over certain lands, comprising about 18,000 acres, and water, at Jervis Bay, to be used for the Naval College and other Federal purposes, failed to secure the assent of the Legislative Council of New South Wales, and the carrying out of the agreement in this regard between the Governments of Commonwealth and State is consequently delayed for the time being.

The actual area now held at Jervis Bay is 8839 acres, comprising :—

(1) Area acquired under the Seat of Government Acceptance Act	... 3,488 acres
(2) Area compulsorily acquired with consent of Government of New South Wales	... 5,100 acres
(3) Area acquired from private owners	... 251 acres

Contour, road and boundary surveys have been completed and plans are in course of preparation giving full topographical information over a considerable area.

5. **Railways.**—The permanent survey of the proposed railway from Queanbeyan to the city site having been completed, the line is now under construction. The work on the New South Wales side of the boundary between Territory and State is being carried out by the Railway Commissioner of that State, that within the Territory being carried out by the New South Wales Railways Construction Branch on behalf of the Commonwealth Government. The latter has agreed to repay the outlay to the New South Wales Government with 5 per cent. added. Up to the present 27 miles of line have been surveyed, from the Capital to Bungendore, and also 60 miles from Jervis Bay to a point near the Shoalhaven River.

6. **Educational Facilities.**—As the result of a conference between the Administrator of the Territory and the New South Wales Education Department, it is proposed that the latter shall, for the time being, continue the administration of education in the Territory, the expenditure involved to be refunded annually by the Commonwealth to the State.

7. **Revenue and Expenditure.**—The present revenue from properties within the Territory (including that derivable from rates, which amounts to £2975) is estimated at £5000. The expenditure in the Federal Territory subsequent to the passing of the "Seat of Government Acceptance Act 1909," and up to the 30th June, 1913, was for 1910-11 £20,216, 1911-12 £68,026, and 1912-13 £137,497, making a total of £225,739.

This amount was distributed as follows:—

Buildings	... ..	£35,310
Power Plant and Power House	... ..	11,956
Electric Supply	... ..	1,812
Roads and Transport	... ..	61,999
Water Supply	... ..	32,368
Sewerage	... ..	1,733
Materials and Stores	... ..	17,371
Running Expenses and Miscellaneous	... ..	9,908
Health, Administration, Education, etc.	... ..	32,601
Afforestation	... ..	2,555
Surveys	... ..	18,126

8. **Military College.**—In June 1911, a Military College was opened at Duntroon for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Previous reference has been made to it in the section of this book dealing with Defence (see page 942).

9. **Naval College at Jervis Bay.**—The Naval College at Jervis Bay is now in course of erection. Pending its completion, the work of the college is being carried on at Geelong, Victoria. For further reference see section of this book dealing with Defence.

10. **Inauguration of the Capital City.**—On the 12th March, 1913, the official ceremony to mark the initiation of operations in connection with the establishment of the Seat of Government was carried out. Foundation stones were laid by the Governor-General, the Prime Minister, and the Minister for Home Affairs. At this ceremony the selection of "Canberra" as the name of the capital city was announced by Lady Denman, the wife of the Governor-General.

SECTION XXXII.

THE NORTHERN TERRITORY.

§ 1. Area and Population.

1. **Introductory.**—Upon the extension of New South Wales westward to the 129th meridian in 1827, the Northern Territory was comprised within that colony (see Year Book No. 4, page 16), and in 1863 was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1st January, 1911.

2. **Area and Boundaries.**—The total area of this Territory is 523,620 square miles, or 335,116,800 acres. Its length from north to south is about 900 miles, while its breadth from east to west is 560 miles. Its eastern boundary, dividing it from Queensland, is the 138th meridian of east longitude; and its western boundary, separating it from Western Australia, the 129th meridian. Its southern boundary is the 26th parallel of south latitude, dividing it from South Australia. The northern boundary is the coast line of those parts of the Indian Ocean known as the Timor and Arafura Seas. Near the mouth of the Wentworth River, in the Gulf of Carpentaria, the coast line is met by the eastern boundary; at Cape Domett, near Cambridge Gulf, the western boundary cuts the northern coast line. The length of coast line is about 1040 miles, or 503 square miles of area to one mile of coast line; an exact survey has, however, not yet been made.

3. **Population.**—(i.) *Character.* In 1881 there were 670 Europeans in the Territory, and at the end of 1912 the number was estimated at 1931. The Chinese population, at its maximum during the years of railway construction, 1887 and 1888, has gradually dwindled, the estimate for 1912 being 1246. Japanese, first recorded in 1884, increased up to the year 1898, falling again after five years. The highest recorded population, excluding aborigines, was 7533 in 1888; the estimate for 1912 was 3475. The year 1911 was the first in which the population was dominated by the European race. A thirty years table of population, distinguishing races, will be found on page 1154 of the Commonwealth Official Year Book, No. 4. Subsequent to the Census of 1911, a revision of the estimates, back to 1901, was made. The results are shewn in the following table:—

POPULATION OF NORTHERN TERRITORY (EXCLUSIVE OF ABORIGINES),
1901 to 1912.

Year ended 31st December.	Male.	Female.	Total.	Year ended 31st December.	Male.	Female.	Total.
1901 ...	3,999	674	4,673	1907 ...	3,095	642	3,737
1902 ...	3,847	627	4,474	1908 ...	2,963	609	3,572
1903 ...	3,582	652	4,234	1909 ...	2,927	576	3,503
1904 ...	3,514	692	4,206	1910 ...	2,738	563	3,301
1905 ...	3,368	678	4,046	1911 ...	2,662	586	3,248
1906 ...	3,248	656	3,904	1912 ...	2,854	621	3,475

The census population (3rd April, 1911) was 2734 males, 576 females; total, 3310. The estimate for 31st December, 1912, was 2854 males, 621 females; total, 3475.

(ii.) *Movement of Population.* The following is a summary of movement of population in 1912 (excluding overland migration, which is inconsiderable):—

MOVEMENT OF POPULATION, NORTHERN TERRITORY, 1912.

Europeans—		Europeans—		Excess—	
Inwards, oversea	599	Outwards, oversea	385	Immigration over	
Births ...	17	Deaths ...	29	emigration ...	215
Others—		Others—		Deaths over births	27
Inwards, oversea	241	Outwards, oversea	240		
Births ...	20	Deaths ...	35		
Increase ...	877	Decrease ...	689	Net gain ...	188

The immigration and emigration of the Territory in five-year periods from 1881 to 1910, and for 1911 and 1912, is shewn in the following table:—

MIGRATION, NORTHERN TERRITORY, 1881 to 1912.

Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.	Year.	Immigra- tion.	Emigra- tion.
1881-5	3,683	3,787	1896-			1906-10	2,559	3,125
1886-90	9,208	7,250	1900	2,538	2,259	1911	412	440
1891-5	1,958	2,353	1901-5	2,211	2,932	1912	840	625

(iii.) *The Aborigines.* An account of the Australian aborigines, by Dr. W. Ramsay-Smith, was given in Year Book No. 3 (pp. 158-176). The interior of the continent is the most thickly populated by the natives, but it is believed that they are rapidly dying out. In these regions, remote from contact with other races, the native has maintained his primitive simplicity, and furnishes an interesting subject of study to the anthropologist and ethnologist. At the census of 1911, full-blooded aboriginals in the employ of whites, and those who were living in a civilised or semi-civilised condition in the vicinity of European settlements, were enumerated—the males being 743, females 480; total, 1223. It has been estimated that the total black population of the Territory is upwards of 20,000.

§ 2. Legislation and Administration.

1. *Transfer to Commonwealth.*—(i.) *The Northern Territory Acceptance Act.* A short historical sketch is given in Year Book No. 6, pp. 1113-4. On 1st January, 1911, the Territory was transferred by South Australia to the Commonwealth, upon terms previously agreed upon by the respective cabinets, and ratified by the Commonwealth *Northern Territory Acceptance Act* (No. 20 of 1910). It is enacted that laws and courts of justice remain in operation, powers and functions of magistrates and officials remain vested; estates and interests continue upon the same terms; trade with Australian States is declared free. The Commonwealth assumes responsibility for the State loans in respect of the Territory, paying the interest yearly to the State, providing a sinking fund to pay off the loans at maturity, and paying off the deficit in respect of the Territory. It also purchases the Port Augusta to Oodnadatta railway, and agrees to complete the construction of the transcontinental railway from Port Darwin to Port Augusta.

(ii.) *The South Australian Surrender Act.* The State Act approves and ratifies the agreement surrendering the Territory.

(iii.) *The Northern Territory (Administration) Act 1910.* The Act provides for Government authorising the appointment of an administrator and officials. South Australian laws are declared to continue in force as laws of the Territory and certain Commonwealth Acts to apply. Power is given to the Governor-General to make Ordinances having the force of law.

(iv.) *Administration.* A Resident Administrator, vested with supreme authority in internal affairs, was appointed in the Department of the Minister for External Affairs in February, 1912. Many other important administrative offices have also been filled.

(v.) *Legislation.* The main provisions of the Ordinances passed are as follows:—The powers and duties of the Administrator vested in the appointee, include custody of the public seal, appointment and suspension of officials, and execution of leases of Crown lands. He is assisted by a council of advice, not exceeding six, and meeting monthly. A Supreme Court with original and appellate jurisdiction is instituted, the method of appointment of the Judge is prescribed, and provision is made for trial by jury, and for the registration and summoning of jurors. A Sheriff, a Registrar-General, and a Health Officer are provided for, also the registration of births, marriages and deaths, and of deeds and documents. District Councils are authorised to assess land values and levy rates on unimproved value. Custody and control of aborigines with extensive powers of supervision are vested in the Chief Protector. Birds protected during the year, and during part of the year, are scheduled. Crown lands are classified, and their mode of acquisition, entry and holding defined. Shop assistants are to have a weekly half-holiday, and the establishments must be closed at a certain time. Mining is encouraged by the provision of rewards for the invention of new processes, and the discovery of valuable deposits and of new mineral fields; subsidization of the industry and the issue of prospecting licenses are also provided for. Licences to search for mineral oil, and leases of land for the working of the industry are available. A Board is constituted for the purpose of making advances to settlers who intend to improve and stock their holdings, to purchase farm implements, plant, etc., or to pay off mortgages, the rate of interest and terms of repayment being set out.

§ 3. Physiography.

1. **Tropical Nature of the Country.**—The Territory is within the torrid zone, with the exception of a strip $2\frac{1}{2}$ degrees wide, which lies south of the Tropic of Capricorn.

2. **Contour and Physical Characteristics.**—The low flat coast line seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl, and ironstone form the occasional cliffy headlands. The sea frontage of more than 1000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries.

The principal features of the coast line are enumerated in Year Book No. 1, p. 66; the rivers in Year Book No. 2, p. 76; the mountains in Year Book No. 3, p. 67; the lakes in Year Book No. 4, p. 77; the islands in Year Book No. 5, pp. 71, 72, and the mineral springs in Year Book No. 6, p. 65.

Inland, the country is generally destitute of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the 17th or 18th parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea, and those that form the scanty supply of the interior systems. Towards the centre of the continent the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

§ 4. Climate, Flora and Fauna.

1. **The Seasons.**—There are two main climatic divisions—the wet season, November to April; and the dry season, May to October; with uniform and regular changes of season. Nearly the whole of the rainfall occurs in the summer months. Fuller particulars will be found in Year Book No. 6, p. 1116.

2. **Fauna.**—The ordinary types of native Australian fauna inhabit the territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of freshwater fish and littoral mollusca. Butterflies and beetles are strongly represented. The white ant is a pest, anthills in the Territory sometimes attaining great dimensions. Mosquitoes and sandflies are very troublesome, particularly in the wet season. Native fauna are in some cases protected. The domesticated animals have been introduced, and buffalo also exist in large herds.

3. **Flora.**—The vegetation is tropical, many of the forms belonging to the Malayan and Oceanic regions. The timber trees are not of great commercial value, but in the coastal regions tropical vegetation grows luxuriantly to the water's edge. On the wide expanses of plain country of the interior, there is little vegetation. The principal orders represented in the Territory are:—*Euphorbiaceæ*, *Compositæ*, *Convolvulaceæ*, *Rubiaceæ*, *Goodeniaceæ*, *Leguminosæ*, *Urticæ*.

Fuller particulars regarding fauna and flora are given in Year Book No. 6, pp. 1116-7.

§ 5. Production.

There is no great home consumption of the articles produced in the Territory, the greater part being exported overseas and to the States of the Commonwealth.

1. **Stock.**—The spacious, well-grassed “runs” of the Territory are suitable for horse and cattle breeding. It is anticipated that the cattle trade with the East will develop. Large numbers are overlanded to neighbouring States, which also take considerable quantities of horse hides. The number of stock on 31st December, 1912, was:—

LIVE STOCK, NORTHERN TERRITORY, 31st DECEMBER, 1912.

Horses.		Cattle.		Sheep.		Pigs.
18,382	...	405,552	...	75,808	...	1,500

Dairying as an industry is not developed. The abundant indigenous herbage is, however, well suited for stock, and the making of hay and ensilage would ensure a progressive industry. A dairy factory is proposed at Daly Farm.

2. **Mining.**—Considerable quantities of the precious and commercial metals are mined. The discovery of gold and tin in various localities, and the measure of success that has attended their working, indicate scope for development.

(i.) *Mineral Production.* Both alluvial and reef gold are found, and there are several batteries and cyanide plants. Other minerals are also raised. The following table shews the total mineral production for the last five years:—

VALUE OF MINERAL PRODUCTION, NORTHERN TERRITORY, 1908 to 1912.

Year.	Gold.	Tin Ore.	Wolfram.	Silver Lead Ore.	Copper Ore.	Smelter Product (C'pp'r Base)	Total Value.
	£	£	£	£	£	£	£
1908 ...	23,943	35,876	1,925	30	5,413	2,555	70,042*
1909 ...	24,148	32,741	4,105	...	1,400	2,342	64,736
1910 ...	21,711	31,113	6,686	...	1,196	...	60,706
1911 ...	30,910	22,900	4,048	...	1,470	...	59,353†
1912 ...	20,150	27,001	3,330	820	3,998	...	55,299

* Includes bismuth valued at £300.

† Includes bismuth valued at £25.

(ii.), *Employment of Miners, 1908 to 1912.* The following table shews employment in mining for five years, distinguishing Chinese:—

MINERS, NORTHERN TERRITORY, 1908 to 1912.

Year.	Europeans.	Chinese.	Total.
1908	150	674	824
1909	190	630	820
1910	140	602	742
1911	101	575	676
1912	84	542	626

(iii.) *Mining Accidents, 1900 to 1912.* In 1911 five mining accidents were recorded, four resulting in death. There were no serious accidents in 1910 and 1912. During the nine years preceding (1901-1909), nine fatal accidents and seven cases of serious injury were recorded. The majority of the victims were Chinese.

3. **Pearl Shell.**—In 1884 mother-of-pearl shell was discovered in the harbour of Port Darwin. Difficulty in working, principally through heavy tides and muddy water, retarded the development of the industry for many years. Latterly, however, the opening up of new patches has led to a revival. In 1912, thirty boats were engaged, valued, with their equipment, at about £10,000; 180 men were employed. Sixty-four tons of pearl shell were obtained, valued at £16,113. *Bêche-de-mer* valued at £1757 was also raised.

§ 6. Commerce and Shipping.

1. **Trade.**—The following table shews the total trade of the Territory for 10 years from 1901 to 1910:—

VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1901 to 1910.

	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
	£	£	£	£	£	£	£	£	£	£
Imports	108,886	107,217	125,244	113,461	86,878	74,659	78,996	68,905	57,994	52,398
Exports	302,931	191,558	178,266	235,650	216,279	254,222	345,721	241,028	278,555	269,063
Total Trade	411,817	298,775	303,510	349,111	303,157	328,881	424,717	309,933	336,549	321,461

No record is now kept of the direction of trade between the Commonwealth States and Territories. It is, therefore, impossible to give the total imports and exports of the Northern Territory for years later than 1910. In 1911 the imports from places outside Australia were valued at £16,920, an increase of £3966 on the previous year. The exports to oversea countries were valued at £48,468, a decrease of £12,983 as compared with 1910. In 1912 imports were valued at £18,130; exports at £59,106.

From 1881 to 1910, the annual average trade in five-year periods was:—

VALUE OF IMPORTS AND EXPORTS, NORTHERN TERRITORY, 1881 to 1910.

Period.	Average Annual Imports.	Average Annual Exports.	Period.	Average Annual Imports.	Average Annual Exports.
	£	£		£	£
1881-1885	125,600	92,727	1896-1900	127,489	158,978
1886-1890	236,099	113,156	1901-1905	108,337	224,937
1891-1895	109,704	177,463	1906-1910	66,590	277,718

2. **Shipping.**—The Territory's oversea commerce is carried in British and Japanese bottoms. One of the British lines maintains a monthly service, other lines are irregular. Coastal shipping is chiefly in Australian vessels. The following table shews the shipping of the Territory:—

SHIPPING, NORTHERN TERRITORY, 1881 to 1912.

Period.	Arrivals.		Departures.	
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1881—1885 (Annual	72	71,814	72	71,692
1886—1890 Average)	95	94,452	103	94,724
1891—1895 "	75	81,128	73	81,090
1896—1900 "	71	88,284	70	88,244
1901—1905 "	63	93,751	63	91,556
1906—1910 "	87	128,502	88	128,408
1911 	71	130,178	71	130,178
1912 	74	138,052	74	138,052

§ 7. Internal Communication.

1. **Railways.**—Under the agreement ratified by the Act the Commonwealth is to construct the Northern Territory portion of the transcontinental railway line (connecting Adelaide and Darwin, *via* Port Augusta).

The Northern line from Adelaide terminates at Oodnadatta, about 100 miles south of the southern boundary of the Territory. The only line at present in the Territory is one from Darwin to Pine Creek, a length of 145½ miles, of 3 ft. 6 in. gauge; and Pine Creek is distant about 1140 miles from Oodnadatta. The extension of this line southwards from Pine Creek to Katherine River is being proceeded with. It is stated that this trans-continental railway would bring London within seventeen days of Adelaide. The Commonwealth also acquired on 1st January, 1911, the property in the line from Port Augusta to Oodnadatta; but the line is at present being worked under the control of the South Australian Railway Commissioner, by agreement between the Commonwealth and South Australian Governments.

2. **Posts.**—The principal mail services are as follows:—

(i.) **Marine.** Postal communication is maintained between Sydney, Melbourne, and Adelaide, *via* North Queensland ports. The service extends to China and Japan. There are three lines of service—two of the shipping companies being British, and one Japanese. The two former are subsidised at poundage rates, the latter at Postal Union rates. One of the British services is monthly, the others are irregular. There is also a quarterly contract service between Darwin and Boroloola, calling half-yearly at Roper River; and a service every two months between Darwin and Wyndham, on the estuary of Ord River, in the north-east of Western Australia. These are subsidised according to agreement for three years, the amount for the first service being £350; and for the second, £125 per voyage.

(ii.) **Inland.** Posts are also despatched into the interior of the Continent. One route is from the Katherine Telegraph Station southwards as far as Renner Springs, and then eastwards to Anthony Lagoon, where the Queensland mailman is met. The service is maintained with difficulty, on account of the many hardships caused by the alternations of extreme drought and flood.

Other inland routes are served, and there is a frequent service in Darwin.

3. **Telegraphs.**—The transcontinental telegraph line, covering a length of 2230 miles, was completed on 2nd August, 1872, at a cost of nearly half-a-million sterling. The line runs in a northerly direction from Adelaide to Darwin, whence telegraphic communication is provided with Asia and Europe, *via* Banjoewangie (Java), Singapore, and Madras.

Between Darwin and Banjoewangie the submarine cable is duplicated.

§ 8. Finance.

1. **Revenue and Expenditure, 1912-13.**—In the Commonwealth finance statement for 1912-13, separate accounts are given for Northern Territory administration. The following shows the receipts and expenditure for the financial year named:—

REVENUE AND EXPENDITURE, NORTHERN TERRITORY, 1912-13.

REVENUE.	£	EXPENDITURE.—cont.	£
Customs and Excise... ..	12,337	Stock and Brands—	
Postal, Telegraph & Telephone	4,075	Salaries and contingencies...	1,677
Railways	13,747	Botanic Gardens—	
Territorial	10,407	Salaries and contingencies...	1,385
Land and Income Tax	5,793	Survey—	
Miscellaneous	10,136	Salaries and contingencies...	16,276
Credit balance N.T. Funds at		Goldfields and Mining—	
31/12/10, paid by Sth. Aust.	24,456	Salaries and contingencies...	14,964
Deficiency on year's transactions	388,658	Education—	
		Salaries and contingencies...	1,130
		Railways—	
	469,609	Salaries and contingencies...	17,963
		Public Works Staff—	
		Salaries and contingencies ...	3,027
		Works and Buildings	7,113
		Miscellaneous	17,534
		Administrative Office—	
		Salaries and contingencies...	4,095
		Interest and sinking fund on	
		C'wealth Inscribed Stock for	
		Redemption of N.T. loans	10,720
		Interest and sinking fund on	
		C'wealth Inscribed Stock for	
		Redemption of Port Augusta	
		Railway loans	3,666
		Interest and Redemption (ex-	
		cluding Port Augusta rail-	
		way)—	
		Interest on loans	129,906
		Contribution to sinking fund	8,445
		Interest and Redemption, Port	
		Augusta railway—	
		Interest on loans	69,410
		Contribution to Sinking Fund	5,413
		Extraordinary maintenance ...	11,034
		Advertising and other expenses	
		in connection with Rolling	
		Stock	108
		Buildings, artesian bores, roads,	
		bridges, farms, etc.	63,564
		Port Augusta railway	1,613
		Launch	225
		Audit	453
			469,609
EXPENDITURE.			
Trade and Customs—			
Salaries and contingencies ...	2,174		
Rent, repairs, etc.	65		
Quarantine Contingencies ...	171		
Postmaster-General—			
Salaries and contingencies ...	12,660		
Mails	3,896		
Rent, repairs, etc.	205		
Administrator's Office—			
Salaries and contingencies ...	3,054		
Govt. Secretary's Office—			
Salaries and contingencies ...	2,284		
Aboriginal Affairs—			
Salaries and contingencies ...	9,986		
Agriculture—			
Salaries and contingencies ...	21,186		
Police—			
Salaries and contingencies ...	10,607		
Gaol—			
Salaries and contingencies ...	2,309		
Charitable Institutions—			
Salaries and contingencies ...	4,930		
Board of Health—			
Salaries	169		
Law Officers—			
Salaries and contingencies ...	2,513		
Marine Office—			
Salaries and contingencies...	3,679		

In addition, the following expenditure was made from the Loan Fund during the year:—

Redemption of N. T. Loans	£71,945
Redemption of Port Augusta Loans ...	£168,954
Total	£240,899

The Commonwealth received £151,513 from South Australia, being the credit balance of Northern Territory funds, but assumed responsibility for interest on loans and redemptions.

2. **Loans.**—The first loan on Northern Territory account was floated in London in 1876; the nominal amount was £75,000, at 4 per cent., due date 1st January, 1916. The public debt on 30th June, 1913, was £3,359,891. The following is a summary:—

PUBLIC DEBT, NORTHERN TERRITORY, 30th JUNE, 1913.

Principal. £		Rate. %		Annual Interest. £
27,216	...	3	...	817
154,992	...	3½	...	5,425
1,798,383	...	3¾	...	67,439
1,379,300	...	4	...	55,172
Total ... 3,359,891	...	—	...	128,853

§ 9. Land Tenure.

1. **Present Policy.**—The system of land settlement in the Territory will be found fully described in the chapter "Land Tenure and Settlement," see pages 241, 242 *supra*. Prior to the transfer of the Territory to the Commonwealth on 1st January, 1911, the sale and occupation of lands were regulated by the South Australian Legislature in Statutes applying particularly to the Territory. Under the Commonwealth Government a complete reorganization is being effected. Two Lands Ordinances of 1912 declare the present land policy and define the conditions. A leasehold system only is provided for and no further alienation of Crown lands is permitted, except in pursuance of existing agreements. A Board, consisting of the Director of Lands, the Director of Agriculture, and the Chief Surveyor, classifies the land and fixes the rents. The land thus classified and appraised is leased in blocks, the maximum areas ranging from 300 square miles of first class pastoral, to 1280 acres of first class agricultural land. The term of pastoral and miscellaneous leases is 21 or 42 years, all other leases are to be in perpetuity, making them almost equivalent to freeholds, but with re-appraisement of rent values every 14 years in the case of town lands, and every 21 years in the case of agricultural and pastoral lands. The conditions are of a very favourable nature, with low rents and elastic conditions of tenure.

2. **Number of Holdings.**—The table on page 242 *supra* shews the total area under lease, licence, and permit in 1901 and in each year from 1908 to 1912. At the latter date 93,838,080 acres were held under pastoral leases and permits; 667 acres under right-to-purchase leases; 378,240 under annual pastoral leases; and 1,924,871 acres under other leases. The other leases include coal and oil permits, 1,664,060 acres; agricultural leases, 8317 acres; mineral leases, 1290 acres; mixed farming permits, 1280 acres; gold leases, 762 acres; tin-dredging permit, 400 acres; and approved applications under the Tropical Products Act 1904 (of South Australia) 20,000 acres.

SECTION XXXIII.

LABOUR AND INDUSTRIAL STATISTICS.*

§ 1. Introductory.

1. **General.**—The field of Australian statistics has recently been extended by the organisation of a Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics. The functions of this branch are to carry out investigations in regard to what are commonly known as labour and industrial statistics, and the scheme of work provides for systematic investigations into the following matters:—

(a) *Trade Unionism.*—Classification of unions and members by industries; development of unions and members; the law relating to trade unions; economic characteristics of trade unionism; trades and labour councils and federation of unions.

(b) *Wages and Hours of Labour.*—The course of wages; index-numbers shewing relation between wages, prices, etc.; current wages and hours of labour—metropolitan and country—in each State.

(c) *Changes in Rates of Wages and Hours of Labour.*—The amount of the change; the number of workers affected; individual and aggregate effects of changes on amount of wages paid; method by which changes brought about.

(d) *Strikes and Lock-outs.*—Classified according to industries affected; their cause, duration, method of settlement, number affected, and direct and indirect losses; operations under Federal and State Arbitration and Conciliation and Wages Board Acts.

(e) *Unemployment.*—Classified according to industries; seasonal and general fluctuations; index-numbers of employment; average duration of employment; operations of Government Labour Bureaux; effect of non-continuity of employment on earnings; co-operation in international investigations.

(f) *Prices, Fluctuations in Exchange Value of Gold and Cost of Living.*—Import and export values, wholesale and retail prices, and house rents; special investigations for past years; index-numbers; cost-of-living inquiries by household budgets; international comparisons.

(g) *Investigations in regard to Principal Industries in Commonwealth.*—Numbers employed and wages paid; classification of wage-earners according to occupations and wage-groups; comparisons between rates of wages and actual earnings.

(h) *Miscellaneous.*—Reports on state of labour market in various industries and localities; immigration; operations of Labour Bureaux; legal cases affecting labour; industrial accidents; co-operation and co-partnership; review of laws affecting labour in

* In this section it is only proposed to present in summarised form the results of the various investigations which have been made. For more complete information reference may be made to the publications of the Labour and Industrial Branch of this Bureau, viz.:—Report No. 1, "Prices, Price-Indexes and Cost of Living in Australia, 1891 to 1912." Report No. 2, "Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia 1891 to 1912." Report No. 3, "Manufacturing Industries in Australia," and "Labour Bulletins" Nos. 1 to 5. In Appendix No. VIII. to Report No. 1, the theory and technique of the formation of price-index numbers is discussed at some length, while in Appendix No. IX. the question of the establishment of a basis for international comparisons of the exchange value of gold and variations in cost of living is investigated.

Australia and elsewhere; review and analysis of reports issued by Australian, British, American, and Continental European Labour Departments.

(i.) *Special Subjects of Investigation.*—Concurrently with the general inquiries to be conducted by the Branch (as specified above), it is proposed that investigations shall be carried out into special matters. Each of these would extend, if necessary, over a period as long as one or two years, and would deal with such matters as:—Apprenticeship; the working of various laws specially affecting labour; the employment of women and children; industrial education; noxious and dangerous trades; workmen's compensation and social insurance; fluctuations in employment and their effect on the conditions and efficiency of labour; the housing of the working people; the cost of production; the regulation and restriction of output.

2. **Classification of Industries.** For the purpose of tabulating and publishing the results of the investigations which have been made in regard to labour organisations, unemployment, rates of wages, etc., the following industrial classification of trades and occupations has been adopted:—

CLASSIFICATION OF INDUSTRIES AND OCCUPATIONS.

I.	Wood, Furniture, Sawmill, Timber-workers, etc.	VIII.	Mining, Quarries, etc.
II.	Engineering, Shipbuilding, Smelting, Metal Works, etc.	IX.	Railway and Tramway Services.
III.	Food, Drink, and Tobacco Manufacturing and Distribution.	X.	Other Land Transport.
IV.	Clothing, Hats, Boots, Textiles, Rope, Cordage, etc.	XI.	Shipping, Wharf Labour, etc.
V.	Books, Printing, Bookbinding, etc.	XII.	Pastoral, Agricultural, Rural, Horticultural, etc.
VI.	Other Manufacturing.	XIII.	Domestic, Hotels, etc.
VII.	Building.	XIV.	Miscellaneous.

§ 2. Labour Organisations.

1. **Types of Trade Unions in Australia.** The types of trade unions in Australia are very diverse in character, and range from the small independent association to the large interstate organisation, which, in its turn, may be merely a branch of a British or international union. Broadly speaking, there are four distinct classes of labour organisations, viz.:—(i.) the *local independent*, (ii.) the *State*, (iii.) the *inter-State*, and (iv.) the *Australasian or International*, but a number of variations occur from each of these classes. The leading characteristics of each of these types were briefly outlined in Labour Report No. 2 (pp. 7 to 9).

Particulars of number of unions and branches in each State of interstate and central labour organisations have already been given in Section XXVII. hereof (see pages 904 to 907).

2. **Number of Unions and Membership in Industrial Groups, 1912.**—The following table shews the number of unions and members thereof in each State at the end of the year, 1912. The number of unions specified for each State refers to the number of different unions represented in each State; that is to say, interstate or federated unions are counted once in each State in which they are represented, but sub-branches within a State are not counted. In order to avoid disclosing the affairs of individual unions, in cases where there are only either one or two unions in any group in a State, the membership is not given separately,

NUMBER OF UNIONS AND MEMBERS IN INDUSTRIAL GROUPS IN EACH STATE, 1912.

Industrial Groups.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Total.
NUMBER OF UNIONS.							
I. Wood, Furniture, etc. ...	4	4	6	4	4	2	24
II. Engineering, Metal Works, etc. ...	16	20	9	12	10	4	71
III. Food, Drink, Tobacco, etc. ...	20	18	7	8	12	5	70
IV. Clothing, Hats, Boots, etc. ...	9	11	3	5	3	2	33
V. Books, Printing, etc. ...	7	10	3	2	6	2	30
VI. Other Manufacturing ...	26	21	6	12	10	5	80
VII. Building ...	14	14	8	7	10	7	60
VIII. Mining, Quarries, etc. ...	16	3	1	2	4	2	28
IX. Railway and Tramway Services ...	7	3	4	3	5	3	25
X. Other Land Transport ...	6	5	3	2	2	1	19
XI. Shipping, etc. ...	12	5	5	7	4	1	41
XII. Pastoral, Agricultural, etc. ...	3	6	1	1	2	1	14
XIII. Domestic, Hotels, etc. ...	8	6	2	3	6	2	27
XIV. Miscellaneous ...	29	25	9	10	19	7	99
Total ...	177	151	67	78	97	51	621
NUMBER OF MEMBERS.							
I. Wood, Furniture, etc. ...	6,238	4,462	1,635	1,421	3,773	•	17,529†
II. Engineering, Metal Works, etc. ...	12,912	9,169	1,944	3,862	1,841	225	29,933
III. Food, Drink, Tobacco, etc. ...	11,273	8,771	4,286	2,214	1,268	320	28,132
IV. Clothing, Hats, Boots, etc. ...	5,996	7,728	1,245	1,005	468	•	16,882‡
V. Books, Printing, etc. ...	3,355	3,166	454	•	406	•	7,420†
VI. Other Manufacturing ...	12,619	7,756	578	1,699	2,028	160	24,838
VII. Building ...	10,719	8,185	2,174	2,236	1,893	402	25,600
VIII. Mining, Quarries, etc. ...	21,731	5,791	•	•	6,670	•	34,192‡
IX. Railway and Tramway Services ...	31,626	12,728	2,931	2,865	4,725	1,130	56,005
X. Other Land Transport ...	4,708	5,220	1,878	•	•	•	12,806†
XI. Shipping, etc. ...	17,540	6,026	5,039	4,136	1,530	729	35,000
XII. Pastoral, Agricultural ...	21,624	15,621	•	•	•	•	50,726†
XIII. Domestic, Hotels, etc. ...	6,008	4,869	374	1,733	1,249	•	14,233‡
XIV. Miscellaneous ...	26,337	17,065	13,262	7,338	5,539	430	69,991
Total ...	192,626	116,557	44,768	37,336	33,282	8,655	433,224

* Not available for publication separately; included in State and Commonwealth Totals.
 ‡ Incomplete, see footnote.*

It may be seen that, with the exception of Group XIV., Miscellaneous, the membership is greatest in Group IX., Railway and Tramway Services (56,005 members), followed fairly closely by Group XII., Agricultural, Pastoral, etc., with over 50,000 members. The least important group from the point of view of membership is Group V., Books, Printing, etc., with less than 8000 members. Particulars are also given in Report No. 2 (pp. 11-12) of the number of male and female members of unions and the percentage of such members on the total number of adult wage earners. Information is also given as to the development of trade unionism since 1891. Other tables shew the classification of unions according to number of members and the number of central labour organisations.

§ 3. Fluctuations in Employment and Unemployment.

1. **General.**—In Australia, but few of the trade unions pay any form of unemployment benefit, and consequently accurate and complete records of unemployment are difficult to obtain. For that reason the investigation for past years was advisedly limited to a record of the numbers unemployed at the end of each year. The results are, therefore, subject to certain limitations, inasmuch as they do not take into account variations in employment and unemployment throughout the year due to seasonal activity and other causes.

For the above reasons it is not safe to conclude that the actual percentage returned as unemployed in past years by trade unions at the end of each year is equal to the average percentage unemployed during the year. Nevertheless, for the purpose of making comparisons and shewing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory figures available, and

the average percentages and index-numbers computed for the several States and groups of unions may be taken as denoting the true course of events with substantial accuracy.*

It may be mentioned that, in order to overcome the difficulties alluded to in regard to seasonal fluctuations, returns as to numbers unemployed have been collected from trade unions each quarter since the beginning of the year 1913.

2. Number Unemployed in Various Industries, 1891 to 1913.—The subjoined table shews for each of the years specified :—

- (a) The number of unions for which returns as to unemployment are available.
- (b) The number of members of such unions.
- (c) The number of members unemployed, and
- (d) The percentage of members unemployed on the total number of members of those unions for which returns are available.

The information given in this table obviously does not furnish a complete register of unemployment. In the first place, with the exception of the year 1913, it relates only to the number unemployed at the end of the year (see preceding paragraph hereof), and, secondly, it does not cover more than a part of the industrial field. And attention should here be drawn to the fact that the value of the comparisons which can be made is, to some extent, vitiated by the fact that returns are not available for the same unions throughout. As regards the year 1913, the table on page 996 shews that for most of the important industries, returns are available for a considerable number of unions and members. It is not unlikely, however, that particulars of unemployment are, on the whole, more generally available for those trades in which liability to unemployment is above the average of skilled occupations. Thus the building and engineering industries are heavily represented in the returns, while such comparatively stable industries as railway service are hardly represented at all. On the other hand, unskilled casual labour cannot, in the nature of the case, be well represented in the returns, which relate mainly to skilled workmen.

Thus, for some reasons, the percentage given is likely to be greater, and for other reasons less, than the true average percentage unemployed throughout the country.

UNEMPLOYMENT.—NUMBER OF UNIONS AND MEMBERS REPORTING, AND NUMBER AND PERCENTAGE UNEMPLOYED, 1891 to 1913.

Particulars.					Unions.	Membership.	Unemployed.	
							Number.	Percentage.
1891	...	...	...	...	25	6,445	599	9.3
1896	...	...	...	...	25	4,227	457	10.8
1901	...	...	...	...	39	8,710	574	6.6
1906	...	...	...	...	47	11,299	753	6.7
1907	...	...	...	...	51	13,179	757	5.7
1908	...	...	...	...	68	18,685	1,117	6.0
1909	...	...	...	...	84	21,122	1,223	5.8
1910	...	...	...	...	109	32,995	1,857	5.6
1911	...	...	...	...	160	67,961	3,171	4.7
1912	...	...	...	...	464	224,023	12,441	5.5
1913, 1st Quarter	...	...	...	...	451	237,216	15,234	6.4
2nd	„	...	...	...	458	243,523	17,854	7.3
3rd	„	...	...	...	472	252,325	17,698	7.0
4th	„	...	...	...	465	251,207	13,430	5.3

* Some description of the various methods of testing the state of the labour market may be found in the Board of Trade Memorandum on Industrial Conditions (Second Series). Cd. 2337, 1904, pp 79 to 125.

See also "Rapport Préliminaire sur la Statistique Internationale du Chômage," M. Louis Varlez, Gand, 1912.

It may be seen that the extent of unemployment was greatest in 1896 and least in 1911. The general trend of the figures shews a decline in unemployment since 1896. In 1912, however, there was an increase of about 0.8 per cent., while the percentage at the end of 1913 shews a slight decrease compared with the previous year. The high percentage for 1891 was largely due, no doubt, to the dislocation of industry following the maritime strike, while the still higher percentage for 1896 may be traced to the prevalent industrial depression, especially in Victoria, caused by the bank failures and the severe droughts. It may be noticed that, though the number of unions reporting in 1896 is the same as in 1891, the number of members shews a large reduction. This indicates that, in time of severe industrial depression, when employment is bad, the members tend to drift away from the unions. Many probably leave their ordinary places of residence in search of work elsewhere.

The accuracy of the above results as an index to the general state of employment among *all* wage-earners in Australia is confirmed by the results obtained from the censuses of 1891, 1901 and 1911, the closeness of the percentages obtained from these two independent sources for the two latter years being remarkable. A comparative table is given in Report No. 2 (p. 18).

3. Unemployment in Different Industries, 1913.—The following table shews the percentages unemployed in several of the fourteen industrial groups. Information as to classification of these groups is given in Report No. 2, page 6. It may be observed that for those industries in which unemployment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Hence, certain industries such as railways, shipping, agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns. Particulars are not, therefore, shewn separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."

UNEMPLOYMENT IN DIFFERENT INDUSTRIES AT THE END OF YEAR 1913.

Industrial Group.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
I. Wood, Furniture, etc. ...	19	19,450	709	3.6
II. Engineering, Metal Works, etc. ...	56	32,778	2,318	7.1
III. Food, Drink, Tobacco, etc. ...	59	19,208	1,083	5.6
IV. Clothing, Hats, Boots, etc. ...	23	15,795	281	1.8
V. Books, Printing, etc. ...	27	8,458	210	2.5
VI. Other Manufacturing ...	66	19,640	1,270	6.5
VII. Building ...	58	26,384	1,020	3.9
VIII. Mining, Quarrying, etc. ...	25	35,707	3,141	8.8
X. Other Land Transport ...	15	14,320	298	2.1
IX., XI., XII., XIII. and XIV., Other and Miscellaneous ...	117	59,467	3,100	5.2
All Groups ...	465	251,207	13,480	5.3

From the above figures it may be seen that the degree of unemployment varies considerably in different industries, ranging from 1.8 per cent. in Group IV. (Clothing, Hats, Boots, etc.) to 8.8 per cent. in Group VIII. (Mining, Quarrying, etc.).

4. **Unemployment in each State, 1913.**—Any deductions which can be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated on page 995), inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent, at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

UNEMPLOYMENT IN DIFFERENT STATES AT THE END OF YEAR 1913.

Quarter ending 31st December, 1913.				
State.	Number Reporting.		Unemployed.	
	Unions.	Members.	Number.	Percentage.
New South Wales	127	105,836	4,794	4.5
Victoria	109	80,122	4,679	5.8
Queensland	50	14,228	624	4.4
South Australia	64	23,114	2,020	8.7
Western Australia	76	21,759	1,014	4.7
Tasmania	39	6,148	299	4.9
Commonwealth... ..	465	251,207	13,430	5.3

The above figures shew that, at the time indicated, the degree of unemployment was the greatest in South Australia, followed, in the order named, by Victoria, Tasmania, Western Australia, New South Wales, and Queensland.

§ 4. Changes in Rates of Wages.

1. **Variations in Wage Index-Numbers in Various Industries, 1891 to 1912.**—The total number of different occupations for which particulars as to wages are available back to 1891 is 652. These wages relate generally to union rates, but in a few cases, more especially for the earlier years, when there were no union rates fixed, predominant or most frequent rates have been taken. The 652 occupations have been distributed over the fourteen industrial groups already specified, and index-numbers computed for each group for the whole Commonwealth. The wages refer generally to the capital town of each State, but in industries such as mining and agriculture, the rates in the more important industrial centres have been taken.

The following table shews wage index-numbers for the whole Commonwealth in each of the fourteen industrial groups during the years specified, wages in the year 1911 being taken as the base (= 1000). Rates of wages for females are not included. The index-numbers are "weighted" according to the number of persons engaged in different industrial groups in each State and the Commonwealth (see Report No. 2, pages 23 and 24).

VARIATIONS IN WAGE INDEX-NUMBERS IN DIFFERENT INDUSTRIES IN THE COMMONWEALTH, 1891 to 1912. (WAGES IN 1911=1000.)

Particulars.	No. of Occupations included.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912
I. Wood, Furniture, etc. ...	27	909	835	906	910	932	934	938	975	1,000	1,017
II. Engineering, Metal Works etc. ...	101	875	873	888	900	913	930	935	946	1,000	1,038
III. Food, Drink, etc. ...	34	751	747	878	895	910	913	922	936	1,000	1,047
IV. Clothing, Hats, Boots, etc.	13	730	725	722	857	872	884	953	965	1,000	1,009
V. Books, Printing, etc. ...	25	907	850	866	872	879	888	931	959	1,000	1,034
VI. Other Manufacturing ...	102	892	861	895	894	893	903	911	935	1,000	1,023
VII. Building ...	67	813	764	866	883	911	919	932	959	1,000	1,027
VIII. Mining, Quarries, etc. ...	71	949	880	893	915	935	934	938	978	1,000	1,018
IX. Railway Services, etc. ...	68	892	894	918	920	923	927	956	965	1,000	1,046
X. Other Land Transport ...	9	848	772	874	874	893	919	919	977	1,000	1,091
XI. Shipping, etc. ...	74	856	773	862	894	904	904	983	964	1,000	1,082
XII. Agriculture, etc. ...	8	810	779	747	800	870	877	938	951	1,000	1,125
XIII. Domestic, Hotels, etc. ...	17	723	671	674	683	686	706	819	838	1,000	1,008
XIV. Miscellaneous ...	36	832	812	817	830	875	883	908	957	1,000	1,093
All Groups* ...	652	848	816	848	866	893	900	923	955	1,000	1,051

* Weighted average.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable vertically. This is evident from the fact that the average wage in each industry group (and for all groups) in 1911 is made equal to 1000.

It may be seen that the index-numbers increase during the whole period under review except in 1896, when there was a fall. The wage index-number increased from 848 in 1891 to 1000 in 1911, and 1051 in 1912. It will be observed that the increase from 1891 to 1911 was relatively greatest in Classes XIII. (Domestic, Hotels, etc.) IV. (Clothing, Hats, Boots, etc.), and III. (Food, Drink, Tobacco, etc.), and it is probably in the industries and occupations included in these groups that "sweating" was most prevalent. The relative increase is least in Class VIII. (Mining, Quarries, etc.), the index-number for that group having increased only from 949 in 1891 to 1000 in 1911 and 1018 in 1912.

It was pointed out in Report No. 2 (see pages 25 and 26) that the index-numbers given in the above table are readily *reversible*, that is to say, any year other than the year 1911 can be taken as base, and an example was given, shewing the amount of wages payable in 1901, 1911 and 1912 in each industrial group for every £1 payable in 1891.

2. Variations in Wage Index-Numbers in Different States, 1891 to 1912.—The following table shews the progress in rates of wages for all industries in each State, wages in 1911 being taken as the base (= 1000). These results are based generally upon rates of wages prevailing in the capital town of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

The following table shews that the relative increase from 1891 to 1911 was greatest in Victoria and South Australia, and least in Tasmania, but in the last-named State there was a remarkable increase, amounting to nearly 17 per cent., in 1912. This is, no doubt, accounted for to a large extent by the fact that the wages board system was first adopted in Tasmania in that year.

These index-numbers are, of course, also reversible, and an illustration was given in Report No. 2 (see page 27).

VARIATIONS IN WAGE INDEX-NUMBERS IN DIFFERENT STATES, 1891 to 1912.
(WAGES IN 1911=1000).

Particulars.	No. of Occupations included.	1891.	1896.	1901.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
New South Wales ...	158	858	819	855	883	907	910	939	965	1,000	1,055
Victoria ...	150	801	768	808	819	870	884	900	938	1,000	1,054
Queensland ...	87	910	874	903	911	916	927	948	962	1,000	1,013
South Australia ...	134	801	803	809	821	847	857	893	939	1,000	1,035
Western Australia ...	69	887	908	913	914	914	921	927	969	1,000	1,034
Tasmania ...	54	939	854	899	937	906	906	915	966	1,000	1,168
Commonwealth*	652	848	816	848	866	893	900	923	955	1,000	1,051

* Weighted average.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable in the vertical columns. This is evident when it is considered that the average wage in each State in 1911 is taken equal to 1000.

§ 5. Current Rates of Wages in Different Occupations and States.

1. **General.**—In Report No. 2 particulars were given, so far as available for each State, of the prevailing rates of wages in upwards of 400 different occupations. In this section the list of occupations has been revised and brought up to date (30th April, 1914).

2. **Comparative Table of Time Rates of Wages, 1914.**—The particulars of wages given in the following table are obtained primarily from awards, determinations, and agreements under Commonwealth and State Acts, and therefore shew the minimum rates prescribed. In cases where no award, determination, or agreement was in force particulars are given, where possible, of the ruling union or predominant rate as furnished by employers or secretaries of Trade Unions. All particulars obtained from this source are marked with an asterisk. It will be seen that for convenience of comparison the wages are in nearly all cases presented as a weekly rate, though in many industries they are actually based on daily or hourly rates, as specified in awards, determinations or agreements. This caution is necessary, in view of the fact that it is often in those industries and occupations in which employment is of an exceptionally casual or intermittent nature that wages are fixed or paid at a daily or hourly rate. Hence the average weekly earnings in such occupations will probably fall considerably short of the weekly rates specified in the table.

The rates specified refer generally to the capital town of each State, but in industries, such as mining and agriculture, rates are necessarily taken for places other than the capital towns. The figures given in the first part of the table relate to journeymen or adult male workers, and in the second part to adult female workers, and in each case represent (except where otherwise specified in the footnotes) the amounts payable for a full week's work of 48 hours. In every case where the hours of labour constituting a full week's work are other than 48, the number of hours is indicated in the footnotes.

WEEKLY RATES OF WAGES OF JOURNEYMEN OR ADULT MALE WORKERS, AT 30th APRIL, 1914, IN THE CAPITAL TOWN OF EACH STATE FOR A FULL WEEK'S WORK.

NOTE.—Except where otherwise specified in the footnotes, the hours of labour constituting a full week's work are forty-eight. The rates specified are in most cases the minimum rates payable in the capital towns to journeymen or adult workers under Awards of Commonwealth or State Arbitration Courts, or under Determinations of Wages Boards. Where no award, determination, or agreement rates are in force, the ruling Union or predominant rates are given and are indicated by asterisks. Rates payable in the mining, shipping, agricultural, pastoral, etc., industries do not, of course, ordinarily refer to the capital towns.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
I.—WOOD, FURNITURE, SAWMILL AND TIMBER WORKS.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Coopers ...	66 0	66 0	66 0	66 0	80 0	*70 0
	to 74 0					
Furniture and Bedding						
Bedding Makers ...	56 0	57 0	*51 4	54 0	60 0	48 0
Boults Carver Operator ...	*63 0	66 0	*60 6	*61 6	75 0	63 0
Cabinet Makers ...	60 0	60 0	*60 6	56 0	69 0	57 0
Carpet Layers ...	60 0	60 0	...	56 0	...	57 0
Chair Makers ...	60 0	60 0	*60 6	56 0	69 0	57 0
French Polishers ...	60 0	60 0	*56 10	56 0	66 0	57 0
Upholsterers ...	60 0	60 0	*56 10	56 0	66 0	57 0
Wood Carvers ...	60 0	60 0	*60 6	56 0	75 0	57 0
" Machinists ...	60 0	62 0	*47 8	56 0	72 0	50 0
			to 60 6			to 57 0
" Turners ...	60 0	60 0	*60 6	56 0	69 0	57 0
Mattress (Wire) Makers.						
Finishers ...	52 6	55 0	*53 2	48 0	...	48 0
Makers ...	52 6	58 0	*53 2	50 0	66 0	48 0
Varnishers ...	52 6	55 0	*53 2	43 0	...	48 0
Timber Yard Workers.						
Box and Case Makers ...	52 6	56 0	50 0	51 0	...	46 6
Labourers... ..	46 0	51 0	48 0	48 0	54 0	46 6
Machinists—						
Boring or Mortising ...	50 0	53 0	52 0	54 0	57 0	51 0
Buzzer or Jointer ...	57 0	60 0	*52 0	51 0	57 0	54 0
General Joiner ...	63 0	68 0	...	...	72 0	51 0
Moulding ...	56 0	60 0	64 0	57 0	60 0	53 0
					& 66 0	
Planing... ..	57 0	60 0	56 0	49 6	72 0	54 0
Sandpapering ...	51 0	54 0	52 0	54 0	54 0	51 0
					& 60 0	
Shaping ...	63 0	66 0	74 0	57 0	75 0	66 0
Tenoning ...	57 0	60 0	*60 0	54 0	60 0	57 0
Ordermen... ..	52 6	57 0	52 0	54 0	*60 0	54 0
			to 58 0			
Pullers and Tailors Out ...	*48 0	46 0	48 0	45 0	57 0	49 6
		& 51 0		to 51 0		
Saw Doctors ...	72 0	72 0	70 0	69 0	72 0	69 0
Saw Sharpeners ...	60 0	60 0	60 0	60 0	*60 0	54 0
Sawyers—Band or Jig ...	63 0	57 0	62 0	54 0	63 0	51 0
						to 57 0
Circular... ..	49 0	56 0	56 0	54 0	60 0	...
	to 60 0			to 60 0	& 66 0	
Gang Frame ...	52 0	57 0	52 0	63 0	63 0	51 0
Re-Cut Band ...	49 0	57 0	58 0	63 0	60 0	51 0
	to 60 0				& 66 0	
Tallymen ...	52 6	57 0	56 0	54 0	57 0	51 0
Wood Turners ...	63 0	60 0	62 0	56 0	*66 0	57 0
				& 58 6	& 72 0	

* Ruling Union or predominant rates.

(1) 42 hours. (2) 44 hours. (3) 45 hours. (4) 46 hours. (5) 46½ hours. (6) 47½ hours. (7) 49½ hours. (8) 50 hours. (9) 51 hours. (10) 52 hours. (11) 53 hours. (12) 53½ hours. (13) 53½ hours. (14) 54 hours. (15) 55 hours. (16) 56 hours. (17) 56½ hours. (18) 57 hours. (19) 58 hours. (20) 60 hours. (21) 63 hours. (22) 70 hours. (23) 72 hours. (24) 116 hours per fortnight. (25) 136 hours per fortnight. (26) 144 hours per fortnight. (27) Summer 54 hours, winter 48 hours. (28) Summer 54½ hours, winter 52½ hours. (29) Summer 56 hours, winter 48 hours. (30) Summer 58 hours, winter 50 hours. (31) Summer 60 hours, winter 56 hours. (32) Summer 60 hours, winter 58 hours. (33) 49½ hours. (34) 45½ hours. (35) 47 hours. (36) 44½ hours. (37) 33 hours. (38) 30 hours.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
II.—ENGINEERING, METAL WORKS, ETC.						
Bedstead Makers (Metal).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Blacksmiths ...	55 0	54 0	55 0	48 0	...	...
	to 65 0					
Chillfitters' Modellers ...	67 6	70 0	67 6	*56 0	...	...
do. Other ...	52 6	58 0	52 6	56 0	...	...
Chippers ...	51 0	49 0	51 0	43 0	...	...
Cutters ...	51 0	51 0	51 0	48 0	...	...
Fitters up... ..	52 6	54 0	52 6	51 0	...	...
Frame setters ...	57 6	56 0	57 6	54 0	...	...
Furnacemen ...	53 0	51 0	53 0	*43 0	...	...
	& 60 0					
Japanners... ..	50 0	48 0	50 0	43 0	...	...
		& 54 0		& 51 0		
Mounters ...	50 0	48 0	50 0	43 0	...	...
		to 60 0		& 51 0	...	...
Boilermakers ...	66 0	66 0	*260 6	72 0	72 0	60 0
			& 64 2			
Brassworkers.						
Coremakers ...	60 0	51 0	244 0	48 0	*72 0	...
	& 66 0					
Dressers ...	60 0	45 0	244 0	43 0	...	...
Finishers ...	60 0	57 0	*260 6	60 0	*72 0	51 0
Furnacemen ...	...	47 6	249 6	43 0	*60 0	42 0
Moulders ...	60 0	57 0	244 0	60 0	*72 0	60 0
	& 66 0					
Electrical Workers.						
Armature Winders ...	72 0	54 0	54 0	66 0	72 0	63 0
		to 66 0				
Cable Jointers ...	72 0	63 0	...	60 0	...	60 0
		& 69 0				
Fitters ...	72 0	66 0	66 0	66 0	72 0	63 0
Instrument Makers ...	68 0	63 0	66 0	60 0	*72 0	63 0
Lamp Attendants ...	52 0	54 0	48 0	48 0	...	54 0
Linesmen... ..	64 0	60 0	51 0	60 0	57 0	54 0
		& 63 0	to 60 0			& 57 0
Mechanics ...	64 0	63 0	51 0	60 0	72 0	63 0
		to 60 0				
Wiremen ...	*64 0	63 0	...	51 0	60 0	57 0
Engineering.						
Blacksmiths ...	72 0	66 0	*260 6	63 0	78 0	60 0
				to 69 0		
Borers and Slotters ...	60 0	60 0	*255 0	60 0	66 0	60 0
				& 66 0		
Brass Finishers ...	70 0	57 0	*260 6	60 0	72 0	51 0
Coppersmiths ...	72 0	66 0	*260 6	69 0	78 0	60 0
Drillers (other than Radial) ...	50 0	50 0	*249 6	52 0	60 0	60 0
Fitters ...	70 0	66 0	*260 6	69 0	72 0	60 0
Millers (other than Universal)	60 0	54 0	*260 6	66 0	66 0	60 0
Pattern Makers ...	74 0	72 0	*262 4	69 0	81 0	60 0
Planers (other than Plate						
Edge and Rail ...	60 0	60 0	*255 0	60 0	66 0	60 0
Shapers ...	60 0	54 0	*260 6	60 0	66 0	60 0
		& 60 0				
Turners ...	70 0	66 0	260 6	69 0	72 0	60 0
Farriers.						
Firemen ...	66 0	57 6	*52 6	60 0	*66 0	*45 0
Floormen ...	60 0	50 0	*47 0	54 0	*60 0	*40 0
Shoemsmiths... ..	60 0	50 0	*52 6	60 0	*66 0	*45 0

For footnotes see page 1000.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
II.—ENGINEERING, METAL WORKS, ETC.—Continued.						
Ironmoulders.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Coremakers, Machine ...	66 0	56 0	² / ₄₄ 0	60 0	66 0	60 0
do. Other ...	66 0	62 0	² / ₄₉ 6	60 0	66 0	60 0
		& 68 0	& 55 0			
Dressers and Fettlers ...	*48 0	51 0	² / ₄₄ 0	50 0	*54 0	42 0
Furnacemen ...	*55 0	54 0	² / ₄₉ 6	54 0	*66 0	42 0
Moulders, Machine ...	62 0	56 0	² / ₄₄ 0	54 0	66 0	60 0
„ Other ...	66 0	62 0	² / ₄₉ 6	60 0	66 0	60 0
		& 68 0	to 58 8			
Ironworkers' Assistants.						
Boilermakers' Helpers ...	48 0	54 0	² / ₄₄ 0	51 0	57 0	48 0
					& 60 0	
do. Labourers ...	45 0	48 0	² / ₄₁ 3	51 0	45 0	45 0
Engineers' Labourers ...	48 0	46 6	² / ₃₉ 5	51 0	*57 0	45 0
Furnacemen's Assistants ...	*48 0	51 0	² / ₃₉ 5	50 0	*51 0	...
General Labourers ...	45 0	48 0	² / ₃₆ 8	51 0	45 0	45 0
Moulders' do ...	45 0	48 0	² / ₃₉ 5	48 0	54 0	42 0
Smiths' Strikers ...	48 0	50 0	² / ₄₄ 0	51 0	60 0	48 0
Sheet Metal Workers.						
Canister Makers ...	48 0	54 0	46 0	50 0	*57 6	...
	& 50 0					
Japanners ...	...	48 0	48 0	45 0	...	...
		to 57 0		to 54 0		
Machinists ...	48 0	53 0	46 0	46 6	57 6	...
	& 50 0					
Solderers ...	48 0	51 0	48 0	50 0	57 6	*48 0
		& 53 0				
Tinsmiths ...	60 0	57 0	54 0	52 0	65 0	*54 0
III.—FOOD, DRINK, TOBACCO, ETC.						
Aerated Water Makers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bottlers ...	52 0	47 6	*45 0	48 0	54 0	*42 0
		& 50 0	to 50 0			
Bottle Washers ...	50 0	43 6	...	48 0	51 0	*42 0
Carters (One Horse) ...	¹ / ₅₀ 0	² / ₅₀ 0	² / ₄₅ 0	¹ / ₄₈ 0	55 0	42 0
„ (Two Horses) ...	¹ / ₅₅ 0	² / ₅₂ 6	² / ₅₀ 0	¹ / ₅₀ 0	55 0	47 0
Drivers (Motor) ...	55 0	² / ₅₄ 0	¹ / ₄₇ 6	⁸ / ₅₅ 6	...	...
Grooms and Stablemen ...	¹ / ₅₀ 0	³ / ₄₅ 0	² / ₄₅ 0	¹ / ₄₈ 0	¹ / ₅₀ 0	*42 0
Loaders ...	50 0	43 6	...	48 0	51 0	*42 0
Packers ...	50 0	43 6	*50 0	48 0	54 0	*42 0
Writers ...	50 0	43 6	*50 0	48 0	51 0	*42 0
					& 54 0	
Bakers						
Board Hands ...	50 0	64 0	¹ / ₅₀ 0	60 0	63 0	47 6
			& 55 0			
Carters (One Horse) ...	¹ / ₅₂ 6	² / ₄₈ 0	² / ₄₇ 6	¹ / ₄₈ 0	¹ / ₅₆ 0	¹ / ₄₂ 0
„ (Two Horses) ...	¹ / ₅₂ 6	² / ₄₈ 0	² / ₅₂ 0	¹ / ₅₀ 0	¹ / ₅₆ 0	¹ / ₄₇ 0
Doughmen ...	60 0	64 0	¹ / ₅₅ 0	60 0	63 0	47 6
			& 60 0			
Fore Hands ...	65 0	69 0	¹ / ₆₀ 0	60 0	68 0	60 0
	to 70 0		to 70 0			
Ovenmen ...	65 0	64 0	¹ / ₆₀ 0	60 0	68 0	47 6
			& 65 0			
Single Hands ...	65 0	69 0	¹ / ₆₀ 0	60 0	68 0	60 0
			& 65 0			

For footnotes see page 1000. ‡ The higher wages specified are for night work.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
III—FOOD, DRINK, TOBACCO, ETC.—Continued.						
Brewers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Adult Males (Other) ...	54 0	54 0	52 0	54 0	56 0	48 0
Bottle Packers and Washers	54 0	54 0	54 0	54 0	55 0	48 0
Cellarmen ...	57 0	57 0	57 0	60 0	56 0	48 0
					& 60 0	
Drivers (One Horse) ...	54 0	54 0	54 0	54 0	57 6	10 48 0
„ (Two Horses) ...	57 0	54 0	54 0	57 0	57 6	10 48 0
„ (Motor ...	57 0	57 0	57 0	57 0	...	51 0
	& 60 0	& 60 0	& 60 0	& 60 0		& 54 0
Engine Drivers ...	66 0	66 0	56 0	66 0	*75 0	*47 6
	& 72 0	& 72 0	to 72 0	& 72 0		& 60 0
Firemen ...	60 0	60 0	54 0	60 0	63 0	*48 0
Greasers and Trimmers	54 0	54 0	48 0	54 0	*63 0	*48 0
			& 60 0			
Malt Hands ...	57 0	57 0	57 0	57 0	56 0	48 0
Stablemen and Grooms	54 0	54 0	54 0	54 0	56 0	10 48 0
Towermen ...	57 0	57 0	57 0	57 0	*56 0	48 0
Butchers.						
Carters (Carcase) ...	8 60 0	19 55 0	28 48 0*	14 48 0	20 55 0	14 42 0
			& 50 0	& 49 0		& 47 0
„ (Retail) ...	33 50 0	10 50 0	28 48 0	10 48 0	10 50 0	14 42 0
			& 50 0	& 50 0		& 47 0
„ (Cutting) ...	...	10 57 0	28 65 0	...	10 60 0	14 60 0
General Hands ...	33 55 0	10 57 0	28 65 0	14 55 0	10 60 0*	15 52 6
Salts ...	33 65 0	10 57 0	28 55 0	14 55 0	10 70 0*	15 52 6
			& 65 0			
Scalders ...	33 55 0	10 57 0	10 55 0	14 55 0	10 54 0	15 52 6
Shopmen ...	33 60 0	10 65 0	28 55 0	14 52 0	15 60 0	15 52 6
	& 65 0		& 65 0	& 60 0	& 70 0	to 60 0
Slaughtermen (Beef) ...	85 0	80 0	65 0	60 0	70 0	65 0
„ (Mutton) ...	†	80 0	70 0	58 0	70 0	65 0
Slaughterhouse Lab'ur's (Beef)	60 0	48 0	28 42 6	45 0	54 0	52 6
„ (Mutton) ...	52 6	48 0	28 42 6	45 0	54 0	52 6
Smallgoodsmen ...	33 65 0	10 65 0	65 0	14 60 0	10 70 0	15 60 0
„ (Assistants) ...	33 57 6	10 57 0	55 0	45 55 0	10 60 0	15 52 6
Confectioners.						
Journeymen ...	60 0	54 0	*48 0	54 0	60 0	*50 0
			to 60 0			
Labourers ...	648 0*	42 0	*45 0	48 0	50 0	...
Storemen ...	648 0*	42 0	*42 6	45 0	50 0	...
			to 48 0			
„ (Head) ...	653 0*	50 0	*50 0	50 0	60 0	...
	to 67 6		to 55 0			
Ham and Bacon Curers.						
Casing Cleaners (Foreman) ...	58 0	57 0	70 0	...	...	60 0
Curers (First Hand) ...	75 0	65 0	65 0	...	...	57 6
Cutters Up (First Hand) ...	67 6	65 0	60 0	...	...	52 6
„ (Assistants) ...	60 0	57 6	52 6	...	...	52 6
Lardmen ...	50 0	48 0	55 0	...	...	52 6
		& 60 0				
Rollers and Trimmers	60 0	57 6	47 6	...	...	52 6
Scalders ...	55 0	57 6	56 0	...	...	52 6
Shavers ...	55 0	57 6	45 0	...	...	52 6
Slaughtermen ...	65 0	65 0	65 0	...	...	55 0
„ (Assistants) ...	55 0	57 6	60 0	...	...	52 6
Smallgoodsmen (First Hand)	65 0	65 0	65 0	...	...	57 6
„ (Assistants) ...	52 6	52 0	55 0	...	...	52 6
Smokers (First Hand) ...	60 0	60 0	57 6	...	...	52 6

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
III.—FOOD, DRINK, TOBACCO, ETC.—Continued.						
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Ice Carters (One Horse) ...	27 49 6†	31 45 0	20 45 0	10 48 0	8 54 0*	42 0
„ (Two Horses) ...	& 51 6 27 52 0‡ & 54 0	31 50 0	20 50 0	10 50 0	8 60 0*	47 0
Jam and Preserve Workers.						
Adult Males ...	45 0	48 0	...	45 0	...	42 0
Solderers ...	50 0	48 0	...	48 0	...	45 0
Milk Carters (One horse) ...	17 51 0	14 45 0	...	10 48 0	14 56 0	16 42 0
„ (Two horses) ...	17 56 0	14 50 0	...	10 50 0	...	16 47 0
Millers (Flour).						
Engine Drivers ...	60 0 to 69 0	60 0 to 69 0	56 0 to 72 0	60 0 to 69 0	*66 0 to 75 0	47 6 & 60 0
Millers (Head) ...	70 0	70 0	*70 0	70 0	68 0	65 0
„ (Shift) ...	63 0 to 70 0	63 0 to 70 0	*53 0 to 63 0	63 0 to 70 0	*68 0	52 6
Millwrights ...	66 0	66 0	...	66 0	...	...
Packermen ...	51 0	51 0	*48 0	51 0	54 0	42 0
Silksmen and Topmen ...	52 6	52 6	*48 0	52 6	...	42 0
Smuttermen ...	51 0	51 0	*48 0	51 0	*54 0	...
Storemen (Head) ...	52 0 to 56 0	52 0 to 56 0	*50 0 to 54 0	52 0 to 56 0	51 0	50 0
Truckers ...	51 0	51 0	...	51 0	48 0	42 0
Wheat carriers ...	72 0	72 0	...	72 0	72 0	50 0
Pastrycooks.						
Carters ...	14 48 0	14 40 0	20 47 6	48 0	...	14 42 0
Journeyman ...	60 0	56 0	14 65 0	60 0	60 0	60 0
„ (Assistants) ...	48 0	50 0	14 55 0	...	...	47 6

IV.—CLOTHING, HATS, BOOTS, ETC.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bootmakers ...	54 0	54 0	54 0	54 0	54 0	54 0
Hatters.						
Felt Hatters ...	†	†	...	†	...	...
Straw Hat Blockers ...	4 55 7	56 0	...	...	...	...
do. Stiffeners ...	4 55 7	56 0	...	...	...	...
do. Foremen ...	4 60 0	63 0	...	...	...	...
do. Bleachers ...	...	50 0	...	...	...	...
Tailoring—Order.						
Cutters ...	70 0	60 0	70 0	70 0	70 0	*70 0
Pressers ...	60 0	55 0	52 6	55 0	60 0	*60 0
Tailors ...	60 0	60 0	55 0	60 0	70 0	*70 0
Trimmers... ..	60 0	52 6	52 0	51 0	...	...
Under Pressers ...	48 0 & 50 0	36 0	...	36 0	50 0	*45 0
Tailoring—Ready-made.						
Cutters ...	65 0	60 0	57 6	60 0	70 0	...
Machinists ...	...	55 0	50 0	50 0	65 0	...
Pressers ...	60 0	55 0	52 6	50 0 & 55 0	60 0	...
Tailors ...	60 0	60 0	65 0	60 0	70 0	...
Trimmers... ..	65 0	52 6	50 0	50 0	...	...
Under Pressers ...	48 0 & 50 0	36 0	42 0	36 0	50 0	...

For footnotes see page 1000. † Piecework rates. ‡ The higher rates specified are for summer months.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
V.—BOOKS, PRINTING, BINDING, ETC.						
Bookbinders.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Finishers ...	62 6	64 0	56 0	56 0	65 0	*70 0
Journeymen ...	62 6	64 0	56 0	56 0	65 0	*60 0
Marblers ...	62 6	64 0	56 0	56 0	65 0	*60 0
Paper Rulers ...	62 6	64 0	56 0	56 0	65 0	*60 0
Lithographers.						
Printers ...	62 6	60 0	60 0	58 0	...	...
Rotary Machinists...	67 6	67 6	60 0	*58 0	...	...
Printers—Daily Newspapers.						
Compositors ... Day	88 0	173 6	273 4	76 0	67 6	63 0
" ... Night	104 0	177 0	273 4	80 0	280 0	70 0
Linotype Operators Day	†	†	184 0	72 0	180 0	†
" " Night	†	†	184 0	†	190 0	†
Machinists, 1st Hand Day	75 0	469 0	265 0	70 0	65 0	70 0
" " Night	285 0	277 0	to 70 0 265 0	70 0	265 0	170 0
Publishers ...	57 6 & 60 0	46 0 to 58 8	60 0	57 0	*60 0	260 0
Readers ... Day	80 0	173 6	265 0	76 0	*70 0	63 0
" ... Night	100 0	177 0	265 0	80 0	185 0*	170 0
Stereotypers (1st Class) Day	67 6	469 0	275 0	58 0	*70 0	70 0
" " Night	72 6	277 0	275 0	64 0	370 0*	170 0
" (Assists.) Day	60 0	457 6	240 0	45 0	*55 0	50 0
" " Night	65 0	266 0	240 0	50 0	355 0*	150 0
Printing—Jobbing Offices.						
Compositors ...	65 0	66 0	56 0	60 0	*65 0	63 0
Linotype Operators ...	378 9	175 3	256 0 & 62 6	372 0	180 0* & 90 0	†
Machinists ...	52 6 & 60 0	66 0	47 6 & 56 0	56 0	*65 0	63 0
Monoline Operators ...	375 0	175 3	256 0 & 62 6	372 0	180 0* & 90 0	†
Monotype Operators ...	367 6	175 3	256 0 & 62 6	372 0	...	†
Readers ...	65 0	70 0	56 0	60 0	270 0*	63 0
Stereotypers ...	60 0	66 0	48 0	60 0	370 0*	...
Typograph Operators ...	375 0	175 3	256 0 & 62 6	372 0	*65 0	...
VI.—OTHER MANUFACTURES.						
Brickmakers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Brick Burners ...	61 6 & 63 0	2075 0	2156 0 2270 0	2060 0	1670 0	49 6
Brick Drawers ...	64 0	65 0	46 0	54 0	†	49 6
Brick Setters ...	64 0	61 0	44 0	56 0	62 0 & 64 0	54 0
Carters (One Horse)	1751 0	1045 0*	3247 6	48 0	54 0	1442 0
" (Two Horses)	1756 0	1050 0*	3252 0	50 0	60 0	1447 0
Clayholemen ...	62 0	54 0	46 0	51 0	60 0	*48 0
Labourers ...	58 0	48 0	40 0	*48 0	56 0	*48 0
Loftsmen ...	54 0	48 0	46 0	48 0	52 0	48 0
Machinemen ...	60 0	959 6	1049 10	52 0	58 0	48 0
Panmen ...	58 0	59 6	44 0	*56 0	58 0	48 0
Pit Foremen ...	70 0	*75 0	50 0	*56 0	66 0	*57 0
Pitmen ...	62 0	57 0	46 0	51 0	60 0	48 0
Pit Shooters ...	66 0	61 0	50 0	55 0	66 0	51 0
Wheelers ...	58 0	50 0	42 0	48 0	60 0	48 0
Yardmen ...	58 0	48 0	40 0	48 0	56 0	48 0

For footnotes see page 1000. † Piecework rates.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
VI.—OTHER MANUFACTURES—Continued.						
Candlemakers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
General Hands ...	48 0	48 0	45 0	48 0	...	...
Moulders ...	48 0	51 0	48 0	50 0	...	...
Press Room Gaugers ...	50 0	50 0	47 0	51 0	...	...
Stillmen ...	50 0	53 0	50 0	53 0	...	...
Coachmakers.						
Bodymakers ...	60 0	60 0	251 4	60 0	63 0	60 0
Labourers...	45 0	42 0	239 5	45 0	*54 0	...
Painters ...	60 0	60 0	251 4	60 0	63 0	60 0
do. Labourers...	46 0	42 0	239 5	51 0	...	...
Smiths ...	60 0	60 0	251 4	60 0	63 0	60 0
do. Strikers ...	45 0	42 0	235 9	45 0	60 0	...
Trimmers ...	60 0	60 0	251 4	60 0	63 0	60 0
Vycemen ...	51 0	45 0	...	45 0	*63 0	45 0
Wheelwrights ...	60 0	60 0	251 4	60 0	63 0	60 0
Gasworks Employees.						
Coke Trimmers ...	60 0	51 0	...	...	*54 0	*60 0
Engine Drivers ...	66 0	60 0	56 0	1663 0*	*66 0	*69 0
			to 72 0		& 69 0	
Gas Fitters ...	57 0	266 0	260 6	62 0	78 0	*69 0
	to 72 0					
Labourers ...	54 0	51 0	1656 0	*48 0	54 0	49 6
Service Layers ...	60 0	54 0	57 0	*66 0	66 0	52 6
do. Labourers ...	55 6	52 6	51 0	*48 0	*54 0	51 0
Stokers ...	66 0	63 0	1673 6	1670 0	66 0	61 6
					& 73 6	
Yardmen ...	54 0	51 0	1656 0	*48 0	54 0	49 6
Glass, Plate, Sheet, and Ornamental.						
Bevellers ...	63 0	55 0	...	56 0	...	60 0
	& 64 0					
Cutters and Glaziers, Plate ...	62 0	52 6	...	56 0	...	...
Lead Light Glaziers ...	63 0	52 6	...	56 0	...	...
Silverers ...	58 0	55 0	...	56 0	...	...
	& 63 0			& 60 0		
Jewellers.						
Chainmakers ...	65 0	55 0	*60 0	60 0	*70 0	*60 0
Engravers ...	70 0	60 0	*60 0	60 0	*70 0	*60 0
Mounters ...	65 0	55 0	*60 0	60 0	*70 0	*60 0
Setters ...	70 0	60 0	*60 0	60 0	*70 0	*60 0
Watch and Clock Makers ...	*65 0	*570 0	*60 0	60 0	*70 0	*60 0
Masons, Marble and Stone	66 0	255 0	266 0	60 0	*78 0	66 0
Monumental Workers.						
Carvers ...	80 0	277 0	262 4	70 0	*78 0	66 0
Fixers ...	66 0	269 8	262 4	60 0	*66 0	66 0
		& 71 6			to 78 0	
Labourers ...	48 0	258 8	247 8	48 0	*54 0	48 0
Letter Cutters ...	72 0	277 0	262 4	66 0	*78 0	66 0
Masons ...	66 0	269 8	262 4	60 0	*66 0	66 0
		& 71 6			to 78 0	
Saddlers.						
Collarmakers ...	54 0	54 0	54 0	54 0	55 0	*54 0
Harnessmakers ...	54 0	54 0	54 0	54 0	50 0	*54 0
Machinists ...	54 0	54 0	54 0	54 0	50 0	*54 0
Saddlers ...	54 0	54 0	54 0	54 0	50 0	*54 0
Tallowmen ...	54 0	*50 0	52 6	...	54 0	1552 6
Tanners and Curriers.						
Beamsmen ...	56 0	54 0	50 0	49 0	54 0	*49 0
						to 63 0
Curriers ...	59 0	57 0	52 6	52 0	57 0	*55 0
						to 57 0

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
VI.—OTHER MANUFACTURES—(Continued).						
Tanners and Curriers—contd.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Machinists, Fleshing ...	56 0	54 0	50 0	49 0	54 0	*55 0
„ Scudding ...	51 0	49 0	48 0	45 0	50 0	*49 0
„ Shaving ...	52 0	50 0	50 0	45 0	57 0	*52 0
„ Splitting ...	59 0	57 0	52 6	52 0	57 0	*55 0
„ Unhairing ...	51 0	49 0	50 0	49 0	50 0	*52 0
„ Whitening ...	52 0	57 0	...	52 0	57 0	*57 0
Rollers and Strikers ...	52 0	50 0	50 0	45 0	50 0	*55 0
Tablemen ...	51 0	51 0	50 0	45 0	50 0	*55 0
Wickerworkers ...	63 0	57 6	253 2	55 0	60 0	52 6

VII.—BUILDING.

Bricklayers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Journeymen ...	78 0	271 6	266 0	*72 0	*84 0	72 0
Sewerage and Tunnel Work ...	84 0	277 0	271 6	*72 0	*84 0	78 0
Carpenters ...	72 0	269 8	266 0	66 0	72 0	66 0
Labourers.†						
Bricklayers' Labourers ...	62 0	64 0	247 8 & 51 4	60 0	*66 0	256 10
Carpenters' „ ...	54 0	52 0	247 8	60 0	*66 0	256 10
Concrete Workers ...	58 0	58 0	247 8	60 0	*60 0	256 10
Earth Excavators ...	54 0	52 0	244 0	54 0	*60 0	256 10
Gear Workers ...	62 0	64 0	251 4	66 0	*72 0	256 10
Masons' Labourers ...	62 0	64 0	247 8	60 0	*66 0	256 10
Plasterers' „ ...	58 0	64 0	247 8	60 0	*66 0	256 10
Scaffold Hands ...	62 0	64 0	251 4	66 0	*72 0	256 10
Lathers ...	*78 0	266 0*	264 2*	*72 0	*78 0	*68 0
Masons ...	269 8 & 73 4	264 2	266 0	60 0	*78 0	66 0
Painters, House.						
Glaziers ...	64 0	260 6	255 0	60 0	66 0	54 0
Painters ...	64 0	260 6	255 0	60 0	66 0	54 0
Paperhangers ...	64 0	260 6	255 0	60 0	66 0	54 0
Signwriters ...	72 0	260 6	255 0	60 0	72 0	60 0
Plasterers ...	78 0	269 8 to 73 4	264 2	72 0	78 0	68 0
Plumbers.						
Galvanised Iron Workers ...	72 0	266 0	260 6	62 0	78 0	*60 0
Gasfitters ...	72 0	266 0	260 6	62 0	78 0	*60 0
Plumbers ...	72 0	266 0	260 6	68 0	78 0	*60 0
Slaters ...	78 0	271 6	...	*72 0	*78 0	*66 0
Tilers ...	78 0	271 6	...	*72 0	*78 0	*66 0
Tuckpointers ...	72 0	264 2	...	*72 0	*78 0	...

VIII.—MINING.†

Coal Mining.	s. d.	s. d.	s. d.		s. d.	s. d.
Blacksmiths ...	56 6 & 60 0	60 0	...	Not Mined.	...	...
Bracemen ...	60 0	50 0	3451 0 & 60 0		...	...
Carpenters ...	56 6 to 72 0	60 0	3456 0 to 59 8		...	...
Deputies ...	72 0 to 87 0	75 0	3463 0 & 66 0		80 0 to 90 0	54 0 to 60 0
Engine Drivers (Winding) ...	72 0 to 80 0	72 0 & 78 0	66 0		85 0 & 89 0	72 0 to 78 0

† See footnote † on next page.

For footnotes see page 1000. † The rates of wages quoted for Builders' Labourers for Sydney, Melbourne, Brisbane, and Adelaide are those payable under State Determinations or Awards. The rates quoted for Perth are the ruling union or predominant rates, while those for Hobart are the rates fixed by the award of the Commonwealth Arbitration Court, which also awarded the following:—Sydney and Adelaide 60s. 6d., Melbourne 55s. 10d., and Brisbane 55s. per week of 44 hours. The validity of parts of this award has not yet been decided.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	N.S.W.	Victoria.	Q'land.	Sth. Aust.	W. Aust.	Tasmania.
VIII.—MINING†—Continued.						
	s. d.	s. d.	s. d.		s. d.	s. d.
Engine Drivers (Other) ...	66 0	66 0	60 0		85 0	66 0
	to 75 0	to 72 0				to 72 0
Labourers (Surface) ...	48 0	45 0	34 45 0		...	42 0
	to 54 0		& 50			to 48 0
„ (Underground) ...	46 0	49 0	34 48 0		60 6	...
	to 54 0		& 51 0			
Machinemen ...	66 0	68 0	34 60 0		92 6	...
	to 76 0		& 63 0			
Miners (Dry Work) ...	†	60 0	34 60 0		87 6	48 0
			& 63 0			to 60 0
„ (Wet Work) ...	†	65 0	34 66 0		...	...
			& 69 0			
Platmen ...	60 0	60 0	34 51 0		68 6	36 0
			& 60 0			to 45 0
Shaftsinkers (Dry Work) ...	266 0	66 0	34 64 6		...	...
		& 72 0	& 67 6			
„ (Wet Work) ...	272 0	266 0	34 70 6		...	...
			& 73 6			
Shovellers ...	54 0	48 0	...		72 6	...
	to 63 0					
Shiftmen (Dry Work) ...	54 0	61 0	34 60 0		83 6	54 0
	to 74 0		& 63 0			
„ (Wet Work) ...	74 0	67 0	34 66 0		...	...
			& 69 0			
Timbermen ...	63 9	60 0	...		...	...
	to 74 0					
Wheelers ...	51 0	50 0	34 48 0		71 6	36 0
		& 55 0			to 78 6	to 42 0
Gold, Silver, Copper, Tin Mining.						
Battery Feeders ...	51 0	32 0	42 0	48 0	35 60 0	48 0
	to 55 6	to 40 0	to 60 0	to 54 0	to 70 0	to 54 0
Bracemen ...	54 0	42 0	60 0	35 54 0	35 70 0	54 0
	to 63 0	to 50 0	to 78 0	to 60 0	to 74 0	to 60 0
Engine Drivers (Winding) ...	72 0	60 0	80 0	72 0	89 0	72 0
	& 78 0	to 78 0	to 93 0	to 84 0		& 78 0
„ (Other) ...	66 0	54 0	70 0	66 0	85 0	66 0
	& 72 0	to 72 0	to 87 0	to 75 0		& 72 0
Labourers ...	55 0	42 0	54 0	48 0	64 6	48 0
		to 50 0	to 66 0	to 52 0	& 66 0	to 54 0
Machinemen ...	57 0	52 0	66 0	66 0	35 80 0	60 0
	to 63 0	to 66 0	to 87 0	to 75 0	& 84 0	& 60 0
Miners (Dry Work) ...	57 0	48 0	60 0	60 0	35 70 0	60 0
	to 63 0	to 54 0	to 78 0	to 70 0	& 74 0	& 66 0
„ (Wet Work) ...	63 0	55 0	70 0	66 0	35 76 0	60 0
	to 69 0	& 60 0	to 87 0	to 75 0	to 84 0	to 72 0
Platmen ...	54 0	42 0	60 0	54 0	35 70 0	54 0
	to 63 0	to 50 0	to 78 0	to 60 0	to 74 0	to 60 0
Shaftsinkers (Dry Work) ...	59 0	54 0	60 0	†	35 86 0	72 0
	to 78 0	to 62 0	to 78 0		to 90 0	
„ (Wet Work) ...	65 0	67 6	70 0	†	35 90 0	72 0
	to 78 0	to 77 6	to 87 0		to 100 0	& 80 0
Timbermen ...	60 0	50 0	70 0	60 0	35 80 0	60 0
	to 72 0	& 54 0	to 87 0	to 69 0	to 84 0	to 72 0

For footnotes see page 1000.

† The rates of wages quoted are those current in the various States as follows:—COAL MINING. New South Wales: Current rates of wages paid in the North and South groups of mines. Victoria: Wages Board determination. Queensland: Industrial Court Awards for South-Eastern Division, and the State exclusive of South-Eastern Division. Western Australia: Agreement Collie River Coal Miners' Union. Tasmania: Ruling rates at Cornwall and Mount Nicholas mines, near St. Mary's. GOLD MINING, ETC.—New South Wales: Award Mount Boppy, and current rates ruling elsewhere in addition to Broken Hill. Victoria: Wages Board determination for gold mining. Queensland: Agreement Mount Morgan, and ruling rates at Ravenswood, Cloncurry, and Charters Towers. South Australia: Ruling rates at Moonta. Western Australia: Ruling rates at Kalgoorlie, Boulder, Gwalia, and Cue districts. Tasmania: Ruling rates at West Coast mines. ENGINE DRIVERS' RATES.—Quoted from Commonwealth Award and Agreements, except where covered by State Awards. † Piecework rates.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
IX.—RAILWAY AND TRAMWAY SERVICES.						
Railway Employees.†	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Engine Drivers (Loco.) ...	72 0 to 96 0	69 0 to 87 0	58 6 to 81 0	72 0 to 90 0	72 0 to 90 0	60 0 to 75 0
Firemen ...	57 0 to 66 0	51 0 to 57 0	45 0 to 54 0	54 0 to 66 0	57 0 to 66 0	45 0 to 54 0
Guards ...	54 0 to 72 0	51 0 to 72 0	49 6 to 78 0	51 0 to 73 6	60 0 to 72 0	48 0 to 51 0
Porters ...	48 0 to 54 0	45 0 to 57 0	45 0 to 51 0	48 0 to 51 0	54 0 to 57 0	42 0 to 48 0
Shunters ...	54 0 to 78 0	51 0 to 69 0	48 0 to 78 0	51 0 to 57 0	57 0 to 57 0	48 0 to 57 0
Signalmen ...	66 0 to 78 0	54 0 to 75 0	48 0 to 63 0	51 0 to 66 0	54 0 to 69 0	45 0 to 57 0
Tramway (Electric) Employees†						
Car Washers or Cleaners ...	48 0	51 0	43 7	48 0*	54 0 to 60 0	48 0
Conductors—1st year ...	48 0	51 0	943 7	48 0*	54 0	45 0
2nd year ...	51 0	54 0	948 11	50 0*	57 0	48 0
3rd year ...	54 0	57 0	955 3	52 0*	60 0	51 0
Firemen (four fires) ...	*57 0	*60 0	954 0	51 0* & 54 0*	63 0	...
„ (less than four fires) ...	57 0	57 0	954 0	...	60 0	...
Horse Drivers ...	*50 0	51 0	3247 6	48 0*	1460 0	48 0
Labourers... ..	48 0	51 0	48 0	48 0*	54 0 & 57 0	48 0
Lampmen, Trimmers	45 0	54 0	...	...	54 0	...
Maintenance men ...	48 0	51 0	944 8	48 0*	54 0 & 57 0	48 0
Motormen—1st year ...	54 0	51 0	943 7	54 0*	54 0	51 0
2nd year ...	57 0	54 0	948 11	56 0*	57 0	54 0
3rd year ...	60 0	57 0	955 3	58 0*	60 0	57 0
Night Watchmen ...	56 0	48 0	1850 0	48 0*	1454 0 to 67 6	50 0
Overhead Wiremen (Leading)	*63 0 & 66 0	63 0	953 2	63 0*	66 0	...
„ „ (Other) ...	*63 0	57 0	947 7	60 0*	57 0	48 0
Pitmen ...	54 0 to 60 0	60 0	...	54 0*	57 0 & 60 0	...
Signalmen ...	60 0 to 66 0	57 0 & 60 0	1448 0	54 0*	...	...
Tower Wagon Drivers, Horse	50 0	51 0	950 0	48 0*	1460 0*	...
Track Cleaners ...	*45 0	51 0	...	48 0*	54 0 & 57 0	48 0
Trimmers or Fuel Men ...	51 0 & 54 0	...	948 0	48 0*	48 0	...

For footnotes see page 1000.

† The hours of labour for Railway Employees are 48 per week (in N.S.W. 96 per fortnight), except in the following cases:—N.S.W.—Porters, 108 to 120 hours per fortnight; VICTORIA—Porters, 48 to 60 hours per week; SOUTH AUSTRALIA—Porters and Signalmen, 48 to 57 hours per week; and TASMANIA—Guards and Shunters, 54, and Porters, 48 to 54 hours per week. Owing to the difference in the classification of grades of Railway Employees in the various States, only minimum and maximum rates are quoted, excluding those for Foremen. ‡ For Sydney, the Wages have been determined by a State Award. For Melbourne, Perth, Fremantle, and Hobart agreements have been made under Commonwealth Arbitration Act. For Brisbane and Adelaide, Awards have been made by the Commonwealth Court of Conciliation and Arbitration. It is understood that these rates are not being paid. In the table, the rates fixed by the State Boards are given for Brisbane, while predominant rates are given for Adelaide. By Commonwealth agreements the wages for Gripmen in Melbourne have been fixed as follows:—1st year of service 51s., 2nd year of service 54s., 3rd year of service and thereafter 57s., except in one instance where 55s. per week has been made the standard wage.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
X.—OTHER LAND TRANSPORT.						
Carriers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
One Horse ...	1750 0	1945 0	3247 6	1048 0	54 0	1412 0
Two Horses ...	1755 0	1950 0	3252 0	1050 0	60 0	1417 0
Three Horses ...	1758 0	1954 0	3255 0	1051 0	...	...
Motor ...	1360 0	50 0	1650 0	855 6	...	...
Jinkers, One Horse...	1750 0	1950 0	3247 6	1048 0*	65 0	1418 0
„ Two Horses ...	1755 0	1955 0	3252 0	1050 0*	65 0	1453 0

XI.—SHIPPING, WHARF LABOUR, ETC.

Marine Engineers.†§	LOWEST CLASS. Under 100 N.H.P.		HIGHEST CLASS. 600 or more N.H.P.	
	s.	d.	s.	d.
Chief ... per month	440		680	
Second ... "	350		440	
Third ... "	310		360	
Fourth ... "	...		300	
5th, 6th, 7th, 8th ... "	...		240	
INTERSTATE				
Merchant Service.§	PASSENGER VESSELS.		CARGO VESSELS.	
	Lowest Class, 250 tons & under.	Highest Class, over 4000 tons.	Lowest Class, 250 tons & under.	Highest Class, over 4000 tons.
Masters ... per month	420s.	860s.	400s.	720s.
Officers, Chief ... "	300s.	400s.	280s.	360s.
„ Second ... "	240s.	340s.	240s.	300s.
„ Third ... "	...	280s.	...	260s.
„ Fourth & Fifth ... "	...	200s.	...	200s.
ALL SEAGOING VESSELS.				
Seamen.§	INTERSTATE PASSENGER VESSELS.		INTERSTATE PASSENGER VESSELS.	
	...	...	...	...
A.B.'s ... per month	...	...	160s.	...
Boatswains ... "	...	...	180s.	...
Donkeymen ... "	...	...	220s.	...
Firemen ... "	...	...	200s.	...
Greasers ... "	...	...	200s.	...
Trimmmers, Lamp ... "	...	...	180s.	...
„ Fuel ... "	...	...	160s.	...
Stewards, Cooks, etc.§	INTERSTATE PASSENGER VESSELS.		INTERSTATE PASSENGER VESSELS.	
	...	...	...	...
Barmen ... per month	...	...	110s.	...
Baker ... "	...	...	190s.	...
Butcher ... "	...	...	140s.	...
Cook, Chief ... "	...	...	270s.	...
„ Second ... "	...	...	170s.	...
„ Ship's ... "	...	...	150s.	...
„ Third ... "	...	...	130s.	...
Scullerymen ... "	...	...	110s.	...
Stewards—	...	...	...	...
1st Saloon, Chief ... "	...	...	120s.	...
„ Second ... "	...	...	150s.	...
2nd Saloon, Chief ... "	...	...	150s.	...
Fore-Cabin Steward ... "	...	...	130s.	...
Bedroom and other ... "	...	...	110s.	...

For footnotes see page 1000.

† Minimum rates under the Commonwealth Arbitration Court Award are classified according to nominal horsepower of vessel; the lowest and highest classes are here specified. ‡ Minimum rates under the Commonwealth Arbitration Court Award are classified for Interstate vessels, and for vessels trading within a State according to tonnage; the lowest and highest classes for Interstate passenger and cargo vessels are here given. § Rates quoted are exclusive of value of victualing and accommodation.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
XI.—SHIPPING, WHARF LABOUR, ETC.—Continued.						
Waterside Workers.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Coal Lumpers per hour	1 9	1 9	1 9	1 9	1 9	1 9
Wharf Labourers „	1 9	1 9	1 9	1 9	1 9	1 9
Lightermen ...	66 0	*50 0	1 ⁶ 56 0	2 ⁶ 6 0||	3 ⁵ 56 0 & 60 0	*50 0

XII.—AGRICULTURAL, PASTORAL, ETC.

Occupations.	N.S.W.	Victoria.	Q'sland.	S. Aust.	W. Aust.	Tas.
Agricultural Workers, etc. { Minimum rates in the agricultural industries have not generally been fixed by industrial tribunals. The following particulars relate to weekly predominant or most frequent rates for adult workers:— General farm hands, 20s. to 25s.; Ploughmen, 20s. to 30s.; Harvesters, 30s. to 40s.; Milkers, 15s. to 25s.; Threshers, 35s. to 45s.						
Chaff Cutters—Stationary ...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Portable ...	...	50 0	...	...	...	1 ⁸ 56 0
Fruit Harvesters per hour	...	52 0	...	...	...	1 ⁸ 60 0
Thresher Feeders ...	...	1 1 ¹ / ₂	...	1 1 ¹ / ₂	...	...
„ Machinists ...	...	...	...	...	...	1 ⁸ 65 0
„ ...	...	...	...	...	...	1 ⁸ 56 0
Gardeners.†						
Gardeners ...	54 0*	48 0	*48 0	1 ⁴ 51 0*	60 0	*54 0
„ Labourers ...	48 0*	45 0	*42 0	1 ⁴ 48 0*	48 0*	*48 0
„ ...	...	...	...	...	to 54 0	...
Nurserymen ...	54 0*	48 0	*48 0	1 ⁴ 51 0*	60 0	*54 0
„ Labourers ...	48 0*	42 0	*42 0	1 ⁴ 48 0*	*48 0	*48 0
„ ...	...	...	...	...	to 54 0	...
Pastoral Workers.						
Cooks§ ...	50 0	50 0	50 0	50 0	*60 0	50 0
Shearers ... per 100	24 0	24 0	24 0	24 0	*25 0	24 0
Shed Hands§ ...	37 6	37 6	37 6	37 6	*46 0	37 6
Wool Pressers ...	65 0	65 0	65 0	65 0	*60 0	65 0

XIII.—DOMESTIC, HOTELS, ETC.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
Club (Residential) Employees.†						
Barmen ...	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
... 2 ⁴ 27 0	1 ⁹ 36 6	2 ⁰ 30 0	1 ⁶ 40 0*	1 ⁴ 65 0=	...	...
Billiard Markers ...	2 ⁴ 24 0	1 ⁹ 28 6	& 35 0 2 ⁰ 50 0	1 ⁶ 25 0	...	1 ⁹ 30 0
Chef ...	2 ⁴ 50 0	1 ⁹ 41 0	2 ¹ 55 0	1 ⁶ 47 6	45 0	1 ⁹ 40 0
... to 80 0	to 56 0	to 70 0	to 80 0	to 65 0	to 80 0	to 80 0
Cook (Second) ...	2 ⁴ 45 0	1 ⁹ 33 6	2 ¹ 45 0	1 ⁶ 45 0	40 0	1 ⁹ 27 6
... to 52 6	to 41 0	to 50 0	& 55 0	& 45 0	to 60 0	to 60 0
„ (Third) ...	2 ⁴ 35 0	1 ⁹ 33 6	2 ¹ 45 0	1 ⁶ 40 0	35 0	1 ⁹ 27 6
... to 42 6	to 36 0	& 47 6	& 45 0	...	to 45 0	to 45 0
Kitchenmen ...	2 ⁴ 26 6	1 ⁹ 26 0	2 ⁰ 25 0	1 ⁶ 25 0	25 0	1 ⁹ 20 0
Porters (Day) ...	2 ⁴ 25 0	1 ⁹ 26 0	2 ⁰ 35 0	1 ⁶ 30 0	25 0	1 ⁹ 20 0
„ (Night) ...	2 ⁴ 25 0	1 ⁹ 26 0	2 ⁰ 25 0	1 ⁶ 25 0	30 0	1 ⁹ 22 6

For footnotes see page 1000.

† Wages quoted for this group of occupations are for Metropolitan areas. ‡ See footnote † page 1012. § And found. || Award rates for Port Pirie. ¶ City of Sydney Council Employees' Award rates are:—Gardeners 60s. to 72s., Labourers 54s. = Without board and lodging.

CURRENT RATES OF WAGES, ETC.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
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XIII.—DOMESTIC, HOTELS, ETC.—Continued.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Hairdressers.												
Journeyman ...	15	55	0	10	55	0	11	55	0	10	55	0
Hotel Employees.†												
Barmen ...	16	37	6	19	36	0	20	30	0	16	40	0*
Billiard Markers ...	19	25	0	19	28	6	20	25	0	16	25	0
Handy Men ...	25	0	19	21	0	20	22	6	16	25	0	25
Lift Attendants ...	19	22	6	19	45	0§	16	20	0	16	25	0
Porters (Day) ...	19	30	0	19	26	0	20	25	0	16	30	0
„ (Night) ...	19	32	6	19	26	0	20	25	0	16	25	0
Waiters (Head) ...	16	45	0	19	36	0	20	35	0	16	42	6
„ (Other) ...	16	35	0	19	31	0	20	20	0	16	30	0
Restaurant Employees.†												
Pantrymen ...	19	25	0	19	26	0	16	30	0	16	25	0
Waiters ...	19	22	6	19	31	0	16	40	0	16	30	0

XIV.—MISCELLANEOUS AND GENERAL LABOUR.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Billposters ...	50	0	51	0	...	48	0	...	50	0	...	...
Coal and Cokeworkers.												
Baggers and Loaders ...	13	46	0	58	0	...	48	0	...	49	6	...
Carters (One Horse) ...	16	48	0	14	50	0	19	47	6	48	0	55
„ (Two Horses) ...	16	51	0	14	55	0	19	52	0	50	0	60
Trimmers ...	18	46	0	68	0	...	48	0	...	49	6	...
Factory Engine Drivers, etc.												
Engine (Stationary) Drivers...	60	0	48	0	60	0	60	0	60	0	60	0
Firemen (1st Class) ...	58	0	54	0	60	0	66	0	60	0	60	0
„ (2nd Class) ...	54	0	48	0	54	0	54	0	54	0	54	0
Greasers ...	54	0	48	0	42	0	54	0	54	0	54	0
Trimmers ...	54	0	48	0	48	0	54	0	54	0	54	0
Firewood Workers.												
Carters (One Horse) ...	17	50	0*	14	45	0	32	43	0	48	0	52
„ (Two Horses) ...	17	55	0*	14	50	0	32	52	0	50	0	...
Municipal Employees.												
Labourers ...	57	0	51	0	51	0	51	0	54	0	45	0
Carters (One Horse) ...	55	0	14	45	0	19	48	0	48	0	60	0
„ (Two Horses) ...	...	...	14	50	0	19	52	6	50	0	66	0
Street Sweepers ...	49	6	51	0	48	0	51	0	54	0	45	0
Musicians.												
Orchestral ¶ ...	60	0	60	0	60	0	60	0	60	0	60	0

For footnotes see page 1000. † Except where otherwise specified, board and lodging are provided in addition to the rates of wages quoted. § Without board and lodging. ¶ Without lodging but including meals. ¶ Rates of wages quoted are for six performances of three hours only.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
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XIV.—MISCELLANEOUS AND GENERAL LABOUR—Continued.

Shop Assistants (Retail).	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Boots	52 6	52 6	55 0	57 6	*45 0	*40 0
Drapers	52 6	60 0	55 0	57 6	to 55 0	to 60 0
Furniture	52 6	60 0	55 0	57 6	*45 0	to 60 0
Grocers	52 6	55 0	50 0	55 0	to 55 0	to 60 0
Hardware	52 6	60 0	55 0	55 0	*45 0	to 50 0
Men's Clothing	52 6	60 0	55 0	& 57 6	to 55 0	to 60 0
				57 6	*45 0	*40 0
					to 55 0	to 60 0
Storemen, Packers, etc. (Wholesale).						
Grocery Packers (Head) ...	55 0	50 0	50 0	55 0	*60 0	*45 0
	to 80 0	to 70 0	to 75 0			
" " (Other) ...	51 0	48 0	54 0	50 0	*50 0	*37 6
					to 56 0	
Grocery Storemen (Head) ...	55 0	60 0	50 0	55 0	*60 0	*50 0
	to 80 0	to 80 0	to 75 0			
" " (Other) ...	50 0	55 0	54 0	50 0	*50 0	*40 0
					to 56 0	
Hardware Packers ...	51 0	47 6	46 0	50 0	*50 0	745 0
					to 56 0	to 55 0
" Storemen ...	50 0	47 6	46 0	50 0	*50 0	745 0
					to 56 0	to 55 0
Other Packers ...	53 0	48 0	54 0	50 0	*50 0	*50 0
					to 56 0	to 60 0
" Storemen ...	50 0	48 0	54 0	50 0	*50 0	*50 0
					to 56 0	
Night Watchmen ...	50 0	54 0	40 0	56 0	56 0	2340 0*
						to 45 0

WEEKLY RATES OF WAGES OF FEMALE ADULT WORKERS AT 30th APRIL, 1914, IN THE CAPITAL TOWN OF EACH STATE FOR A FULL WEEK'S WORK.

Note.—Except where otherwise specified in the footnotes, the hours of labour constituting a full week's work are forty-eight.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bedding Machinists ...	...	27 6	27 6	25 6	...	27 6
Picture Framing, Adults ...	25 0	32 6	...	...	...	...
Brassworking—Coremakers ...	35 0	30 0	...	...	...	...
Biscuitmaking, Adults ...	14 0	22 6	...	...	...	...
	to 20 0					
Confectioners—Chocolate Dippers ...	22 0	22 0	...	22 0	3430 0	...
" Other Adults ...	20 0	20 0	...	20 0	...	...
Jamworkers—Fillers ...	30 0	30 0	...	21 0	...	20 0
" Other Adults ...	20 0	23 0	...	21 0	...	20 0
Cigarmaking—Ringing ...	25 0	24 0	...	...	...	...
" Wrapper Stripers ...	25 0	25 0	...	...	...	...
Buttermaking ...	...	30 0	...	...	...	...
Cheesemaking ...	...	30 0	...	...	...	...
Tea Packing—Headwomen ...	...	28 6	...	...	...	...
" Other Adults ...	...	17 6	...	...	...	...
		to 22 6				

For footnotes to numbers see page 1000.

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bootmaking—Journeywomen ...	25 6	25 6	21 0	20 0	...	22 6
" Wax-Thread Machs.	32 6	32 6	...	...	...	...
Dressmaking ...	...	21 6	...	16 0	15 0	...
Dyers and Cleaners ...	...	25 0	...	...	...	...
Hatmaking (Straw)—Finishers	425 0	25 0	...	...	...	...
" Machinists	430 0	25 0	...	...	...	...
Milliners ...	...	25 0	...	...	12 6	...
Shirtworkers ...	...	22 6	...	16 0	15 0	...
Tailoring, Order—						
Machinists, Coat Hands ...	28 6	25 6	26 0	25 6	40 0	30 0
" Trousers, Vest Hands	24 0	25 6	26 0	25 6	40 0	25 0
Tailoresses, Coat Hands ...	30 0	26 0	26 0	26 0	45 0	30 0
" Trousers, Vest Hands	& 35 0	24 0	23 6	24 0	35 0	30 0
" " " " "	& 29 0					
Tailoring, Ready Made—						
Machinists, Coat Hands ...	25 0	24 0	24 0	22 6	40 0	...
" Trousers, Vest Hands	23 0	24 0	21 6	22 6	40 0	...
Tailoresses, Coat Hands ...	25 0	24 0	21 0	22 6	45 0	...
" Trousers, Vest Hands	23 0	22 6	21 0	20 0	35 0	...
Textile Workers—						
Comb Minders ...	21 0	22 6	...	...	...	...
Drawers and Menders ...	30 0	22 6	...	...	...	...
Gillbox Minders ...	21 0	22 6	...	...	...	...
Warpers ...	30 0	30 0	...	...	...	...
Weavers, Loom ...	35 0	30 0	...	...	...	...
Other Adults ...	21 0	21 0	...	...	...	...
Tiemakers—						
Boxers, Pressers and other	...	20 0	...	...	...	...
Needleworkers ...	...	22 6	...	...	...	...
" " " "	...	& 25 0	...	...	...	...
Machinists ...	...	20 0	...	...	...	...
" " " "	...	& 22 6	...	...	...	...
Waterproof Clothing—						
Garmentmakers ...	...	27 6	...	...	...	...
Needleworkers ...	...	22 6	...	...	...	...
Bookbinding—Folders ...	3623 0	21 0	18 6	22 0	...	...
" Sewers ...	3625 0	23 0	18 6	22 0	...	...
Lithographing—Feeders ...	3625 0	22 0	18 6	22 6	...	...
Printing—General Assistants ...	...	22 0	18 6	22 6	...	...
Brushmaking—						
Bench Drawers ...	...	21 0	...	21 0	...	...
Treadle Knot Machinists ...	...	21 0	...	21 0	...	...
Candlemaking—Forewomen ...	30 0	27 6	21 6	...	...	...
Jewellery—						
Chainmakers ...	36 0	35 0	...	35 0	...	...
" " " "	& 40 0					
Gilders ...	36 0	45 0	...	35 0	...	...
Polishers and Scratch Brushers	35 0	45 0	...	35 0	...	...
" " " "	& 36 0					
Paperbag Making, Adults ...	22 6	20 0	...	...	...	...
Pottery—General, Adults ...	20 0	23 0	*21 0	...	...	...
Saddlery, Adults ...	24 0	24 0	24 0	30 0	...	...
Soapmaking, Adults ...	21 0	27 6	...	...	...	...
Tent and Tarpaulin Making—						
Machinists ...	3530 0	30 0	*21 0	...	...	...
" " " "	& 32 6					
Wickerworking, Adults ...	...	...	...	30 0	15 0	...

WEEKLY RATES OF WAGES, ETC.—Continued.

Occupations.	Sydney.	Melb.	Brisbane.	Adelaide.	Perth.	Hobart.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Leather working—						
Hand Stitchers ...	26 0	25 0	...	...	...	...
Other Adults ...	26 0	20 0	...	...	...	...
Rubberworking, Adults ...	27 0	27 0	...	...	...	...
Hotel Employees†—						
Barmaids ...	1 ⁶ 25 0	1 ⁸ 23 6	1 ⁵ 25 0	1 ⁶ 35 0	1 ⁴ 65 0 ⁺	1 ⁸ 20 0
Housemaids ...	2 ⁰ 14 0	1 ⁶ 16 0	2 ⁰ 15 0	1 ⁶ 18 6	20 0	& 25 0 1 ⁸ 12 0
Laundresses ...	2 ⁰ 20 0	1 ⁶ 21 0	20 0	& 20 0 1 ⁶ 25 0	15 0	& 15 0 1 ⁸ 20 0
Waitresses, Head ...	1 ⁶ 20 0	1 ⁶ 16 0	...	1 ⁶ 20 0 & 25 6	...	to 25 0 1 ⁸ 15 0
„ Other ...	1 ⁶ 17 6	1 ⁶ 15 0	1 ⁶ 15 0	1 ⁶ 18 6 & 20 0	22 6	to 20 0
Laundry Employees—						
General Hands ...	17 6	24 0	...	18 0	36 0	24 0
Shirt and Collar Machinists ...	23 6	30 0	...	...	42 0	...
Sorters ...	20 0	25 0	...	20 0	36 0	...
Starchers ...	15 0 & 22 0	24 0	...	18 3	36 0	...
Washers ...	22 0	...	...	18 0	36 0	...
Restaurant Employees†—						
Pantrymaids ...	1 ⁸ 12 0 & 14 0	1 ⁶ 15 0	1 ¹ 16 0§	1 ⁶ 22 6	20 0	1 ⁶ 15 0
Waitresses ...	1 ⁸ 13 0	1 ⁶ 15 0	1 ¹ 16 0§	1 ⁶ 18 6	22 6	1 ⁸ 15 0
Shop Assistants—						
Boots ...	...	30 0	30 0	...	39 0	...
Drapers ...	30 0	32 0	30 0	27 6	39 0	...
Fruiters and Confectioners ...	20 0	30 0	...	...	...	...
News Agents, Book Stall ...	30 0	30 0	...	...	...	...
Tobacconists ...	40 0	30 0	...	...	...	...
Office Cleaners ...	7 ² 21 0	3 ⁸ 22 6	...	...	...	...

For footnotes see page 1000.

† Except where otherwise specified, board and lodging are provided in addition to the rates of wages quoted. ‡ Without board or lodging. § Without lodging, but including meals.
 ¶ Kalgoorlie rates, no determination in force in Perth.

§ 6.—Retail Prices, House Rents, and Cost of Living.

1. **Introduction.**—In Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. An important discussion of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Report No. 2 results of further investigations were given, and in that Report and in Labour Bulletins Nos. 1 to 4 information was given as to variations in retail and wholesale prices, house-rent, and cost of living up to the end of 1913.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure" method. The first process is, of course, to work out the average price of each commodity included, and numbers (called "mass-units") representing the *relative* extent to which

each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding "mass-unit" represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding "mass-unit," a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any desired year as "base," that is, making the expenditure in that year equal to 1000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. A numerical example of the technique and methods adopted for the computation of index-numbers was given in Report No. 2 (pp. 44 and 45).

2. Scope of Investigation.—It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz:—

- (a) Variations in the *purchasing power* of money, and
- (b) Variations in the *standard of living*.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and that such limitation is at the disposal of each individual: the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands that we shall select a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption, and, keeping this list with the quantities constant, ascertain what it costs to purchase the whole group. In this way we can compare the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in thirty of the more important towns of the Commonwealth in January, 1912.

3. Commodities and Requirements Included.—The 47 items of expenditure included have been divided into four groups, viz:—(a) groceries and bread, (b) dairy produce, (c) meat, and (d) house rent. The omission of clothing, fuel and light, travelling, amusements, etc., may on a superficial examination appear to limit the value of the results. Against this, reasons for which these items have been omitted were given in Report No. 1*, and it was explained that index-numbers based on these four groups satisfactorily reflect the general rise and fall in cost of living. It should, moreover, be pointed out that whereas the expenditure on the four groups included amounts to no less than 45 per cent. on the total expenditure, cost of clothing amounts to only 12 per cent., and of fuel and light to as little as 3 per cent. It follows, therefore, that before the index-numbers, based on the four groups, can cease to truly reflect variations in general purchasing value, changes in the price of clothing must have departed very widely, one way or the other, from the general change which has occurred. This applies still more forcibly, of course, to changes in price of fuel and light. Since prices of nearly all commodities generally move in the same direction, it is obvious that the validity of the index-numbers, based on the four groups referred to, can be vitiated only under a quite abnormal state of affairs, and even then only to a slight extent.

* See "Prices, Price-Indexes and Cost of Living in Australia," Labour and Industrial Branch Report No. 1, by G. H. Knibbs, C.M.G., F.S.S., etc., December, 1912, pp. 15 to 20.

In Report No. 2 (pages 46-7) a tabular statement was given furnishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.

4. Variations in the Cost of Living in each Metropolitan Town, 1901 to 1913.—In Reports Nos. 1 and 2 and Labour Bulletins Nos. 1 to 4 index-numbers were given for each of the four groups, and for all groups combined, for each capital town since 1901, the expenditure in 1911 being taken in each case as base (=1000). In this section only summarised results are given. Firstly, for food and groceries; secondly, for house rent; and thirdly, for all groups combined—the weighted average expenditure for all capital towns in 1911 being taken in each case as base (=1000). The index-numbers are fully comparable with each other, that is to say they shew not only the variations from year to year in each capital town, but also the relative cost as between the towns. In the preceding issue of this book the index-numbers given were comparable in the horizontal lines, but not in the vertical columns, the reason being that the cost in each town in 1911, whatever it might be, was made equal to 1000. As it appears, however, that these figures have been misused to shew the relative cost as between the various towns, it has now been thought desirable to substitute index-numbers which are comparable in all respects, the average cost for the six towns in 1911 being made equal to 1000.

(i.) *Food and Groceries.* The index-numbers thus computed for the three groups comprising groceries and food are shewn in the following table:—

RETAIL PRICES IN METROPOLITAN TOWNS, INDEX-NUMBERS FOR GROCERIES AND FOOD (GROUPS I., II., and III.), 1901 to 1913.

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Sydney ...	917	1,067	1,029	877	972	964	936	1,030	1,012	1,000	989	1,124	1,131
Melbourne	965	1,015	974	916	952	945	925	995	949	960	935	1,082	1,024
Brisbane	965	1,015	987	892	945	959	947	1,023	983	1,000	1,018	1,102	1,042
Adelaide...	1,028	1,026	981	940	998	982	951	1,010	1,025	1,001	1,020	1,154	1,119
Perth ...	1,184	1,274	1,283	1,210	1,258	1,237	1,197	1,226	1,212	1,251	1,346	1,345	1,367
Hobart ...	1,011	1,050	1,054	981	1,030	1,047	1,010	1,055	1,093	1,073	1,058	1,190	1,164
Weighted Average*	969	1,052	1,017	922	984	978	953	1,028	1,004	1,003	1,000	1,126	1,094

* For all capital towns.

The above figures are directly comparable in every respect; thus it will be seen that the same quantity of food and groceries, which cost £1000 in the capital towns considered as a whole in 1911, would have cost £917 in Sydney in 1901, £1346 in Perth in 1911, or £1024 in Melbourne in 1913.

(ii.) *House Rent.*—In the following table index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1913, taking the average rent for the six capital towns in 1911 as the base (= 1000). The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (*i.e.*, houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number ("weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each town was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weighted average rents for all houses, and that they do not refer to any particular class

of houses. The actual predominant rents for each class were given in appendixes to Reports Nos. 1 and 2, and an examination of these figures shews that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table:—

**HOUSE RENTS IN METROPOLITAN TOWNS, INDEX-NUMBERS SHEWING
WEIGHTED AVERAGE RENTS (GROUP IV.), 1901 to 1913.**

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Sydney	858	854	856	866	887	891	911	922	955	968	1,090	1,183	1,246
Melbourne	733	744	747	764	771	782	804	828	842	916	970	1,016	1,089
Brisbane	498	492	507	508	519	524	575	616	662	700	767	804	863
Adelaide	629	629	629	625	702	761	812	872	940	1,018	1,112	1,160	1,125
Perth	801	796	802	798	739	716	684	678	667	696	810	880	928
Hobart	667	669	673	674	681	686	703	727	749	776	805	829	887
Weighted Average*	751	753	756	766	782	793	816	839	867	919	1,000	1,064	1,118

* For all capital towns.

NOTE.—The above figures are directly comparable in every respect.

It may be seen that, except in Adelaide, where rents remained constant from 1901 to 1904, and in Perth, where they decreased from 1903 to 1909, there has been a uniform increase in each metropolitan town during the whole of the period under review. The increase has been greater in Adelaide (where the average rent in 1901 was only 629, compared with 1112 in 1911, and 1125 in 1913), and in Brisbane than in the other towns. It should be observed, however, that at the commencement of the period rents were exceptionally low in Adelaide, and were comparatively low in Brisbane (see Appendix IV. to Report No. 1). The graph for Perth presents features entirely different from those for the other towns; the fall in rents commencing in 1903 and lasting until 1907 is followed, after another temporary decline in 1909, by a rapid rise.

(iii.) *Cost of Living.*—The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as cost of living is concerned. The following table shews the index-numbers for groceries, food, and house rent for each metropolitan town, the weighted average cost for the six capital towns in 1911 being taken as base (= 1000):—

**COST OF LIVING IN METROPOLITAN TOWNS, INDEX-NUMBERS SHEWING
WEIGHTED AVERAGE RESULTS FOR ALL GROUPS (GROCERIES, DAIRY
PRODUCE, MEAT, AND HOUSE RENT), 1901 to 1913.**

TOWN.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Sydney ...	893	979	958	872	937	934	926	986	969	995	1,031	1,148	1,178
Melbourne	870	903	881	854	878	878	875	926	905	942	950	1,055	1,051
Brisbane	769	800	790	734	770	780	794	856	851	877	915	979	969
Adelaide	864	863	837	812	873	891	894	953	990	1,006	1,058	1,157	1,121
Perth ...	1,027	1,077	1,085	1,041	1,045	1,023	986	1,001	988	1,023	1,126	1,154	1,128
Hobart ...	869	893	897	855	886	899	886	920	952	951	954	1,042	1,050
Weighted Average*	880	929	910	858	901	902	897	951	948	970	1,000	1,101	1,104

* For all capital towns.

NOTE.—The above figures are directly comparable in every respect.

Generally speaking, prices were low in 1904, high in 1902 and 1908, and still higher in 1912. The general trend of the graph for Perth is different to that for the other towns, owing mainly to the decline in house rents in that place, which occurred from 1903 to 1907, and again in 1909.

The general result for all the six towns shews that cost of living was slightly over 10 per cent. higher in 1912 than in 1911. The cost-of-living index-number for 1913 was only 0.3 per cent. higher than for 1912. It was lower in Melbourne, Brisbane, Adelaide, and Perth, and higher in Sydney and Hobart.

5. **Relative Cost of Living in Different Towns, 1913.**—The index-numbers given in the preceding paragraphs shew *changes in the cost of living separately for each individual town during the years 1901 to 1913.* The figures given in the table below shew *the relative cost of living in 1913 in the thirty towns for which particulars are now being collected.* The cost of living in each town is compared with the weighted average for all towns. That is to say, the average expenditure in each town has been weighted by a number representing the population of the town, and a weighted average expenditure for all towns has been computed. Taking this average expenditure as the base (=1000), the relative expenditure in each town is shewn. Owing to the concentration of population in the capital towns, the prices and rents in these towns have a preponderating influence on the weighted average index-numbers for all towns combined.

COST OF LIVING 1913.—INDEX-NUMBERS SHEWING RELATIVE COST IN EACH OF THIRTY TOWNS (INCLUDING 4, 5, AND 6-ROOMED HOUSES AND ALL HOUSES), COMPARED WITH WEIGHTED AVERAGE COST FOR ALL TOWNS.

Town.	Groceries and Food.	HOUSE RENT.				GROCERIES, FOOD, AND RENT, INCLUDING HOUSES HAVING—			
		4-r'm'd Houses only.	5-r'm'd Houses only.	6-r'm'd Houses only.	All Houses. Weightd Average.	4 Rooms.	5 Rooms.	6 Rooms.	All Houses. Weightd Average.
N.S. WALES—									
Sydney ...	1,023	1,194	1,206	1,162	1,196	1,079	1,093	1,083	1,091
Newcastle ...	1,019	780	837	830	753	941	949	937	913
Broken Hill ...	1,215	944	886	915	744	1,126	1,089	1,086	1,028
Goulburn ...	1,041	689	876	942	954	926	978	998	1,007
Bathurst ...	952	748	755	804	769	886	877	889	880
VICTORIA—									
Melbourne ...	925	1,027	997	1,021	1,046	959	953	967	973
Ballarat ...	929	457	512	574	605	775	770	776	801
Bendigo...	956	600	610	655	646	840	824	826	833
Geelong...	949	688	751	824	825	863	873	895	900
Warrnambool ...	943	730	726	720	746	874	860	847	865
QUEENSLAND—									
Brisbane ...	942	719	740	792	828	869	865	878	897
Toowoomba ...	944	617	632	603	721	838	825	791	856
Rockhampton ...	965	661	624	669	727	866	835	838	870
Charters Towers	1,096	596	639	617	568	933	921	81	886
Warwick ...	970	517	622	651	690	823	837	833	859
S. AUSTRALIA—									
Adelaide ...	1,011	1,154	1,165	1,147	1,080	1,058	1,070	1,070	1,039
Moonta, etc. ...	1,030	545	568	600	564	872	854	845	845
Port Pirie ...	1,049	903	816	793	753	1,001	960	939	932
Mt. Gambier ...	923	630	616	669	650	827	806	814	815
Petersburg ...	1,002	972	955	883	866	992	984	951	948
W. AUSTRALIA—									
Perth ...	1,146	1,001	1,000	986	891	1,098	1,090	1,077	1,045
Kalgoorlie, etc. ...	1,453	1,038	966	1,032	754	1,317	1,267	1,272	1,176
Mid. Junct., etc. ...	1,176	820	891	911	781	1,060	1,067	1,062	1,020
Bunbury ...	1,232	891	883	857	668	1,114	1,093	1,065	1,002
Geraldton ...	1,253	1,402	1,346	1,254	1,033	1,302	1,289	1,254	1,166
TASMANIA—									
Hobart	1,052	906	837	802	858	1,005	970	945	975
Launceston ...	970	757	791	796	792	900	901	895	899
Zeehan ...	1,146	559	628	660	424	955	943	937	859
Beaconsfield ...	1,068	293	294	281	253	815	772	729	745
Queenstown ...	1,167	715	661	733	535	1,019	974	980	916
Weighted Average	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Some few words as to the proper interpretation of the above table may not be out of place. The weighted average for all towns represents the price paid, on the average, by the people of all the towns regarded as a single community. In other words, if the people of the thirty towns are paying on the average £1000 for groceries and food, the people in Sydney are paying £1023, those in Newcastle £1019, and so on. (See column I.) Or again, if the people of the thirty towns are paying on the average £1000 for the four series of items, then those of Melbourne are paying £973, of Ballarat £801, and so on (See final column.) Thus, in this table, the figures are *comparable vertically*, but are *not directly comparable horizontally*, and this is to be carefully borne in mind in making comparison. That they are not directly comparable horizontally is immediately evident

when it is remembered that each series, or group, for all towns is represented by the one figure—1000—though actually they do not represent equal amounts.

Comparing the first column with the fifth and last columns, it may be seen that the relative costs in the different towns in regard to the two main divisions, and the weighted average for all groups combined, differ considerably. Thus, in Sydney the index-number for rent (all houses), is 1196, or 19.6 per cent., above the weighted average for all towns, whereas the index-number for groceries and food is 1023, or 2.3 per cent. above the average. In Brisbane, on the other hand, the index-number for groceries and food is greater than that for house-rent, both numbers being below the weighted average. In some of the smaller towns, too, especially in the mining districts, it may be seen that rents are very low, and groceries high, compared with the weighted average.

6. Variation in Purchasing Power of Money, 1901 to 1913.—In several of the tables given in the preceding paragraphs, attention has been drawn to the fact that the index-numbers are not directly comparable either horizontally or else in the vertical columns. The reasons for this were also pointed out. By combining the figures given for the capital towns on page 1018 (a) shewing variations in cost of living from year to year in each town separately, and (b) shewing relative cost of living in the several towns during the year 1913, results which are in all respects comparable may be obtained. These are shewn in the following table, in which the average cost for the six capital towns in the year 1911 has been taken as the base. This base has been taken as equal to 20s., instead of 1000, as in the former tables.

A special investigation as to relative cost of living in 100 towns in the Commonwealth was made in November, 1913, during which month a householders' budget inquiry as to expenditure on living was also conducted. The results of the former investigation are shewn in the following tables, and in the map on page 1025, while the results of the latter will be included in a special report to be issued at an early date;—

PURCHASING POWER OF MONEY.—AMOUNTS NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1913 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.†

Year.			Sydney.	Melb'rne	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901	...	...	17 10	17 5	15 5	17 3	20 6	17 5	17 7
1902	...	...	19 7	18 1	16 0	17 3	21 7	17 10	18 7
1903	...	...	19 2	17 7	15 9	16 9	21 8	17 11	18 2
1904	...	...	17 5	17 1	14 8	16 3	20 10	17 1	17 2
1905	...	...	18 9	17 7	15 5	17 6	20 11	17 9	18 0
1906	...	...	18 8	17 7	15 7	17 10	20	18 0	18 0
1907	...	...	18 6	17 6	15 11	17 11	19 9	17 9	17 11
1908	...	...	19 9	18 6	17 1	19 1	20 0	18 5	19 0
1909	...	...	19 9	18 1	17 0	19 10	19 9	19 0	19 0
1910	...	...	19 11	18 10	17 6	20 2	20 6	19 0	19 5
1911	...	...	20 7	19 0	18 4	21 2	22 6	19 1	20 0*
1912	...	...	22 11	21 1	19 7	23 2	23 1	20 10	22 0
1913	...	...	23 7	21 0	19 5	22 5	22 6	21 1	22 1
1912	1st Quarter		21 4	19 9	19 6	22 6	22 4	19 7	20 9
	2nd "		22 5	20 10	19 6	23 2	23 8	20 2	21 9
	3rd "		24 1	22 1	19 8	23 8	23 6	21 5	22 11
	4th "		23 10	21 8	19 8	23 3	22 10	22 2	22 7
1913	1st "		23 5	21 0	19 1	22 8	22 6	21 1	22 0
	2nd "		23 10	21 2	19 7	22 11	22 11	21 3	22 4
	3rd "		23 6	21 1	19 4	22 4	22 4	21 1	22 1
	4th "		23 6	20 10	19 6	21 10	22 5	20 10	21 11

* Basis of Table.

These figures shew not only the variations in cost of living from year to year in each town separately, but also (in the horizontal lines) the relative cost in the several towns in each year. Thus each value given for any town and year is directly comparable with any other value. It may be seen, for example, that 17s. 10d. in Sydney in 1901 was equivalent to 17s. 5d. in Melbourne, or to 20s. 5d. in Perth in 1906, and to 20s. on the average in all six towns in 1911, and to 23s. 10d. in Sydney in the second quarter of 1913.

While the figures in each vertical column shew the increase and decrease in cost of living from year to year in each town respectively, those in the horizontal lines shew the relative cost of living in any given year.

(i.) *Groceries and Food only.* The following table has been computed in the same manner as that indicated above, but relates to *groceries and food* (46 items) *only*. The average expenditure for the six capital towns in 1911 has again been taken as the basis of the table (= 20 shillings) and the figures are, of course, comparable throughout.

PURCHASING-POWER OF MONEY.—GROCERIES AND FOOD ONLY.—AMOUNT NECESSARY ON THE AVERAGE IN EACH YEAR FROM 1901 to 1913 TO PURCHASE IN EACH CAPITAL TOWN WHAT WOULD HAVE COST ON THE AVERAGE £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 ...	18 4	19 4	19 4	20 7	23 8	20 3	19 4
1902 ...	21 4	20 4	20 4	20 6	25 6	21 0	21 1
1903 ...	20 7	19 6	19 9	19 8	25 8	21 1	20 4
1904 ...	17 6	18 4	17 10	18 10	24 3	19 8	18 5
1905 ...	19 5	19 1	18 11	19 10	25 2	20 7	19 8
1906 ...	19 3	18 11	19 2	19 8	24 9	20 11	19 7
1907 ...	18 9	18 6	18 11	19 0	23 11	20 2	19 1
1908 ...	20 7	19 11	20 6	20 2	24 6	21 1	20 7
1909 ...	20 3	19 0	19 8	20 6	24 3	21 10	20 1
1910 ...	20 0	19 2	20 0	20 0	25 0	21 6	20 1
1911 ...	19 9	18 8	20 4	20 5	26 11	21 2	20 0*
1912 ...	22 6	21 8	22 0	23 1	26 11	23 10	22 6
1913 ...	22 8	20 6	20 10	22 5	25 4	23 3	21 11
1st quarter	20 9	19 9	21 11	22 0	26 0	21 10	21 0
1912 2nd "	21 10	21 5	21 11	22 11	28 2	22 11	22 3
3rd "	23 11	23 2	22 1	23 10	27 4	24 8	23 9
4th "	23 6	22 3	22 3	23 6	26 1	25 9	23 2
1st "	22 9	20 9	20 9	22 5	25 6	23 2	22 0
1913 2nd "	23 2	20 10	21 2	22 11	26 0	23 9	22 4
3rd "	22 7	20 5	20 10	22 4	25 0	23 5	21 10
4th "	22 1	20 0	20 8	21 10	24 11	22 9	21 5

* Basis of Table.

(ii.) *House Rent only.* The following table gives similar particulars for *house rent only*, the average for the six towns in 1911 being again taken as the basis of the table (= 20 shillings).

PURCHASING-POWER OF MONEY.—HOUSE RENT.—AMOUNT PAYABLE ON THE AVERAGE IN EACH YEAR FROM 1901 TO 1913 FOR HOUSE RENT IN EACH CAPITAL TOWN, COMPARED WITH A RENT OF £1 IN 1911 IN THE AUSTRALIAN CAPITALS REGARDED AS A WHOLE.

Year.	Sydney.	Melb'ne.	Brisbane.	Adelaide.	Perth.	Hobart.	Weighted Average of 6 Capital Towns.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1901 ...	47 3	14 8	9 9	12 7	16 0	13 4	15 1
1902 ...	17 3	14 11	9 10	12 7	15 11	13 5	15 2
1903 ...	17 4	14 11	10 1	12 7	16 0	13 6	15 3
1904 ...	17 5	15 3	10 2	12 7	16 0	13 6	15 4
1905 ...	17 10	15 5	10 5	14 0	14 9	13 7	15 8
1906 ...	17 11	15 8	10 6	15 3	14 4	13 9	15 11
1907 ...	18 4	16 1	11 6	16 3	13 8	14 2	16 4
1908 ...	18 7	16 7	12 4	17 5	13 7	14 7	16 10
1909 ...	19 2	16 10	13 3	18 10	13 4	15 0	17 5
1910 ...	19 10	18 4	14 0	20 4	13 11	15 6	18 5
1911 ...	21 10	19 5	15 4	22 3	16 3	16 1	20 0*
1912 ...	23 8	20 4	16 1	23 2	17 7	16 7	21 3
1913 ...	24 11	21 10	17 3	22 6	18 7	17 10	22 4
1st quarter	22 4	19 8	16 0	23 3	17 0	16 3	20 6
1912 2nd "	23 4	20 0	16 1	23 5	17 2	16 4	21 1
3rd "	24 7	20 7	16 2	23 5	18 0	16 10	21 10
4th "	24 4	20 11	16 0	22 11	18 3	16 11	21 7
1913 1st "	24 5	21 4	16 10	22 11	18 3	18 0	22 0
2nd "	24 10	21 9	17 2	22 11	18 6	17 9	22 4
3rd "	24 11	22 0	17 3	22 3	18 7	17 8	22 5
4th "	25 6	22 1	17 10	21 10	18 11	18 0	22 8

* Basis of Table.

§ 7. Wholesale Prices.

1. **General.**—The results of an investigation into wholesale prices in Melbourne were given in some detail in Report No. 1, from 1871 to the end of September, 1912. In Report No. 2 summarised results were included for the whole of the latter year.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity, in the units of measurement specified, is used or consumed, are shewn in a tabular statement in Report No. 2 (page 61).

2. **Index-Numbers and Graphs.**—Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shewn in the following table.

* In the computation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base (= 1000), while for later years the aggregate expenditure on 92 commodities is taken.

(i.) *Table of Index-numbers.*—The index-numbers have in each case been computed with the prices in the year 1911 as base; that is to say, *they shew the amount which would have had to be expended in each of the years specified in order to purchase what would have cost £1000 in 1911, distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities included in each group, and in all groups respectively.* Thus, in the last column it may be seen that the cost of the relative quantities of the various commodities was 1229 in 1871, and 974 in 1901, as compared with 1000 in 1911, 1170 in 1912, and 1088 in 1913. In other words, prices were lower in 1911 than in either 1871 or 1912, and the purchasing power of money in 1911 was, accordingly, greater. Again, prices were higher in 1911 than in 1901, and the purchasing power of money in the former year was therefore less.

**MELBOURNE WHOLESALE PRICES INDEX-NUMBERS, 1861 to 1912, COMPUTED
TO YEAR 1911 AS BASE.**

YEAR.	I. Metals and Coal.	II. Jute, Leather, &c.	III. Agri- cultural Produce, &c.	IV. Dairy Produce.	V. Gro- ceries.	VI. Meat.	VII. Building Ma- terials.	VIII. Chem- icals.	All com- modities together.
1861 ...	1,438	1,381	1,583	1,008	1,963	...	1,070	2,030	1,538
1871 ...	1,096	1,257	1,236	864	1,586	...	1,044	1,409	1,229
1881 ...	1,178	1,115	1,012	935	1,421	...	1,091	1,587	1,121
1891 ...	895	847	1,024	995	1,032	888	780	1,194	945
1901 ...	1,061	774	928	1,029	1,048	1,345	841	917	974
1902 ...	1,007	756	1,193	1,215	945	1,447	837	881	1,051
1903 ...	923	834	1,209	1,059	936	1,443	875	921	1,049
1904 ...	821	885	754	876	916	1,427	845	875	890
1905 ...	773	850	894	980	942	1,209	801	859	910
1906 ...	882	978	916	972	923	1,110	896	864	948
1907 ...	1,037	1,017	973	1,020	948	1,204	968	961	1,021
1908 ...	1,033	901	1,312	1,198	968	1,335	935	891	1,115
1909 ...	1,014	907	1,000	1,119	978	1,088	911	815	993
1910 ...	1,004	1,052	969	1,100	999	1,008	996	898	1,003
1911 ...	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1912 ...	1,021	991	1,370	1,206	1,052	1,357	1,057	978	1,170
1913 ...	1,046	1,070	1,097	1,054	1,024	1,252	1,128	995	1,088

NOTE.—The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.

(ii.) *Graphs.*—The index-numbers are shewn for each group and for all groups combined in the graphs on page 1026. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shewn so that comparison may be made between the price levels for all commodities and those for the commodities comprised in each group separately. The index-numbers for the individual groups are represented by the light lines. The broken lines at the commencement of each graph shew the index-numbers for the separate years, 1861 and 1866, the continuous records commencing with the year 1871. The actual index-numbers for the whole period were given in Report No. 1.

3. Seasonal Fluctuations and Tables of Prices.—Information as to seasonal fluctuations in wholesale prices was given in Report No. 2 (page 64) and tables of prices of each commodity were given in Appendixes to Reports Nos. 1 and 2.

§ 8. Miscellaneous.

1. **General.**—The year 1913 is the first complete year for which records as to various labour and industrial matters have been collected. Statistics relating to such matters as strikes and lockouts, changes in rates of wages, labour organisations, unemployment, assisted and nominated immigrants, operations of employment bureaux, industrial accidents, distribution of wages, nominal and effective wages, and operations under various Commonwealth and State Industrial Acts, may be found in the Quarterly Labour Bulletins and other Labour Reports.

2. **Map shewing relative Cost of Living.**—In November, 1913, a special inquiry was made as to the relative cost of living in 100 towns in the Commonwealth. On the map on page 1025 each town is shewn by means of a number, the reference list at the side of the map indicating the town corresponding to each number and its relative cost-of-living index-numbers. The figures in black type relate to the cost of food, groceries and rent of 5-roomed houses, while those in light type refer to food and groceries only. A glance at the map shews that the distribution of the 100 towns selected is in close approximation to the density of population (indicated by hatching). The weighted average cost for all the 100 towns is taken as the base.

INDIAN OCEAN

SOUTH PACIFIC OCEAN

Weighted Average for 100 towns = 1000.

A E B F C G D H

A—Less than one inhabitant to 16 sq. miles.
B—From 1 inhabitant in 16 sq. miles to less than 1 in 4 sq. miles.
C— " 1 " " 4 " " " 1 in 1 sq. mile.
D— " 1 " " 1 sq. mile " 2 in 1 " "
E— " 2 inhabitants in 1 " " " 4 in 1 " "
F— " 4 " " 1 " " " 8 in 1 " "
G— " 8 " " 1 " " " 16 in 1 " "
H—16 inhabitants and upwards in 1 sq. mile.

RELATIVE COST OF LIVING

(NOVEMBER, 1913)

IN RELATION TO

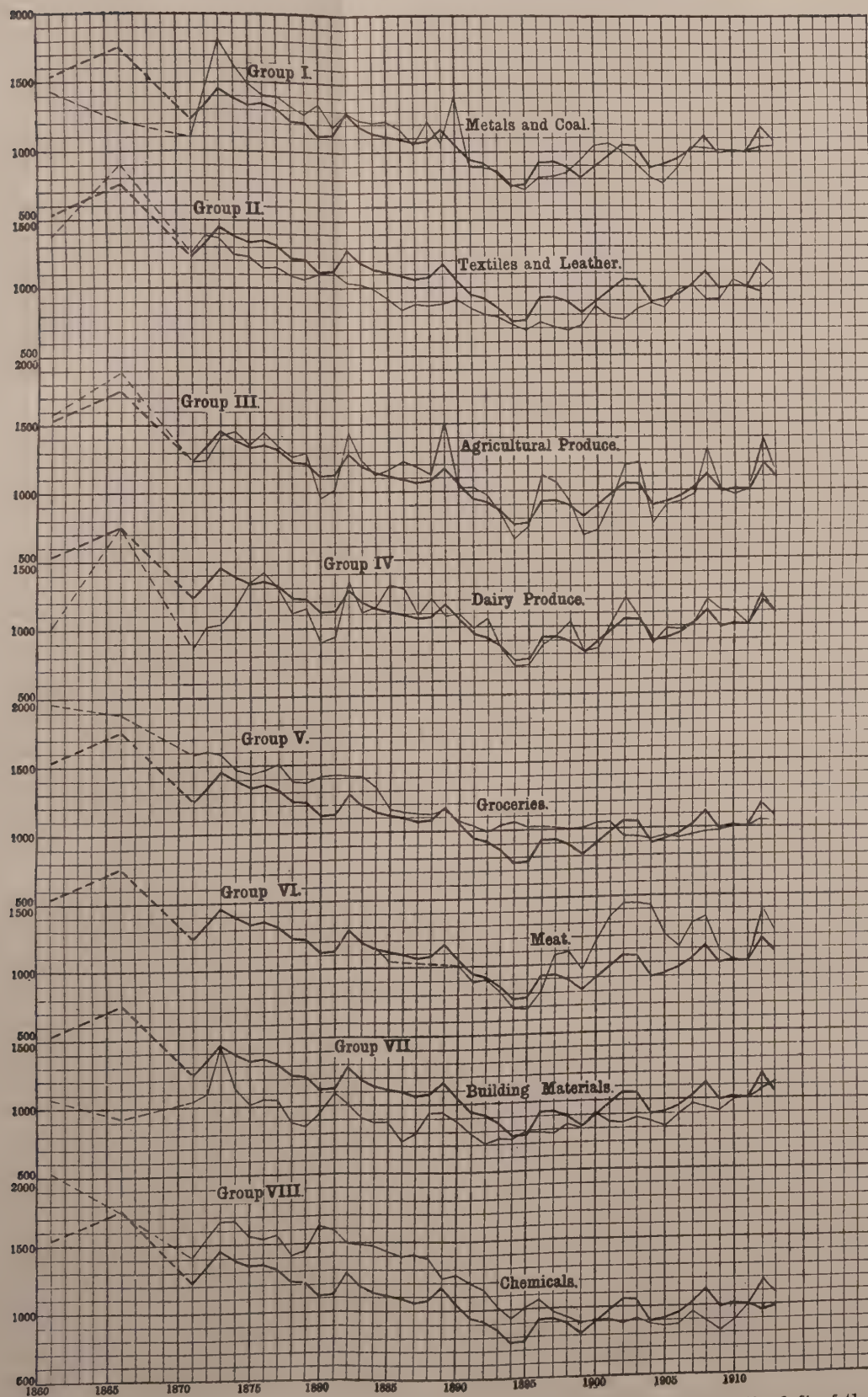
DISTRIBUTION OF POPULATION

Reference to Numbers on Map.

1	SYDNEY,	1,100,	1,022.
2	Newcastle,	960,	1,026.
3	Broken Hill,	1,116,	1,238.
4	Goulburn,	974,	1,013.
5	Bathurst,	892,	939.
6	Armidale,	875,	968.
7	Cobar,	937,	1,066.
8	Cooma,	861,	1,028.
9	Cootamundra,	977,	1,019.
10	Deniliquin,	836,	976.
11	Grafton,	919,	1,018.
12	Hay,	918,	1,109.
13	Lismore,	931,	1,120.
14	Lithgow,	915,	1,012.
15	Moree,	981,	1,097.
16	Mudgee,	824,	917.
17	Queanbeyan,	1,052,	1,047.
18	Tamworth,	902,	966.
19	Wagga Wagga,	967,	942.
20	Yass,	943,	1,026.
21	West Wyalong,	966,	1,017.
22	MELBOURNE,	964,	915.
23	Ballarat,	767,	913.
24	Bendigo,	815,	923.
25	Geelong,	872,	932.
26	Warrnambool,	865,	937.
27	Ararat,	833,	930.
28	Bairnsdale,	796,	933.
29	Camperdown,	866,	922.
30	Castlemaine,	773,	881.
31	Creswick,	730,	929.
32	Daylesford,	779,	950.
33	Echuca,	811,	977.
34	Hamilton,	871,	956.
35	Horsham,	849,	956.
36	Korumburra,	839,	961.
37	Kyneton,	768,	906.
38	Maryborough,	745,	923.
39	Mildura,	972,	980.
40	Nhill,	867,	955.
41	Portland,	796,	954.
42	Salé,	784,	888.
43	Swan Hill,	975,	996.
44	Walhalla,	790,	1,108.
45	Wangaratta,	825,	948.
46	Warracknabeal,	810,	894.
47	BRISBANE,	878,	940.
48	Toowoomba,	840,	971.
49	Rockhampton,	863,	995.
50	Charlton Towers,	907,	1,061.
51	Warwick,	822,	951.
52	Bundaberg,	851,	1,001.
53	Cairns,	1,067,	1,134.
54	Charleville,	1,069,	1,135.
55	Chillagoe,	1,153,	1,344.
56	Cooktown,	937,	1,201.
57	Cunnamulla,	992,	1,166.
58	Goondiwindi,	958,	1,030.
59	Gympie,	791,	966.
60	Hughenden,	1,145,	1,218.
61	Ipswich,	874,	976.
62	Longreach,	1,047,	1,173.
63	Maryborough,	762,	941.
64	Mount Morgan,	880,	1,027.
65	Townsville,	996,	1,024.
66	Winton,	1,147,	1,294.
67	ADELAIDE,	1,056,	997.
68	Kadina-Moonta,	862,	1,024.
69	Port Pirie,	972,	1,038.
70	Mt. Gambier,	816,	915.
71	Petersburg,	998,	988.
72	Kapunda,	847,	995.
73	Murray Bridge,	911,	995.
74	Port Augusta,	931,	1,063.
75	Port Lincoln,	993,	1,085.
76	Renmark,	985,	1,072.
77	Victor Harbour,	924,	1,026.
78	PERTH,	1,116,	1,159.
79	Kalgoorlie,	1,277,	1,469.
80	Midland Junction,	1,079,	1,177.
81	Bunbury,	1,113,	1,219.
82	Geraldton,	1,317,	1,262.
83	Broome,	911,	1,518.
84	Albany,	1,147,	1,277.
85	Carnarvon,	1,343,	1,548.
86	Katanning,	1,154,	1,206.
87	Leonora,	1,265,	1,679.
88	Menzies,	1,153,	1,653.
89	Ravensthorpe,	1,147,	1,642.
90	HOBART,	875,	1,039.
91	Launceston,	911,	960.
92	Zeehan,	934,	1,155.
93	Beaconsfield,	769,	1,054.
94	Queenstown,	988,	1,167.
95	Burnie,	950,	976.
96	Campbell Town,	701,	966.
97	Devonport,	899,	1,003.
98	Franklin,	909,	1,054.
99	Oatlands,	820,	1,012.
100	Scottsdale,	788,	918.

* House rent not available.

Heavy figures denote index-numbers for Food, Groceries, and Rent of 5-roomed Houses.
Light figures denote index-numbers for Food and Groceries only.



EXPLANATORY NOTE.—The scale for each graph is shewn by the figures on the left of the diagram, the line marked 1000 shewing the base line (for the year 1911) in each case. The heavy line in each graph represents the index-numbers for all groups combined, the light line indicating in each case the index-numbers for the separate group.

SECTION XXXIV.

MISCELLANEOUS.

§ 1. Immigration.

(A) The Encouragement of Immigration into Australia.

1. **Introduction.**—Various measures have from time to time been adopted by the Commonwealth and State Governments, as well as by private societies and individuals, with a view to promoting the immigration of suitable classes of settlers into Australia. Some of the States of the Commonwealth are at present pursuing immigration policies of a vigorous nature; in others, relatively little is being done. The activities of the Commonwealth Government (which is vested with constitutional powers in regard to immigration under Sec. 51, xxvii., of the Constitution Act 1900) with respect to the encouragement of immigration, have hitherto practically been confined to advertising in handbooks, newspapers, and periodicals, the resources and attractions of Australia.

2. **State Immigration.**—The advertising in the United Kingdom of the resources of the individual States has been carried out by their Agents-General in London. Various means have been adopted, including newspaper advertising; the publication of illustrated pamphlets bearing on the resources and principal primary industries of the State; lectures by officers who have a knowledge of the conditions prevailing in the State; official displays at the principal agricultural, manufacturing, and similar exhibitions; cinematographic pictures typical of industrial life and scenic views; and pictures and lantern slides.

(i.) *Nominated and Assisted Passages.* Arrangements have been made by most of the State Governments with several of the principal shipping companies for substantial reductions in the amounts of passage money to be paid by immigrants. These reductions are generally granted to all persons desiring to settle on the land or engaging in any form of rural industry, to domestic servants, and to any others who satisfy one of the several Agents-General in London that they will make suitable settlers. Provision has also been made whereby settlers may nominate their relatives or friends for passage to Australia at greatly reduced rates.

(ii.) *Reception on Arrival.* Immigrants whose coming is advised are met on board the vessel on arrival by Government officers, who make themselves acquainted with the needs of the passengers and assist and advise them in various ways. To those desirous of settling on the land, information and assistance is rendered by officers of the Lands Department, and special concessions are granted in respect of fares on the Government railways. In other cases endeavours are made to obtain employment for each applicant according to his special needs and qualifications.

(iii.) *Numbers of Immigrants.* Particulars of the net immigration to the Commonwealth are given on pages 100 and 107, and of assisted immigration on page 112, hereinbefore.

(iv.) *Recent Immigration.* During 1910 and the three subsequent years, a great advance has been made in Australian immigration generally, the State Governments having adopted more active and direct means than had hitherto existed for making the advantages and opportunities of their respective States better known to the people of the United Kingdom, Europe, and America. In Victoria, to which State a small number of emigrants from America had been attracted (chiefly by the irrigable areas), it was decided to further enlighten American and Canadian home-seekers with regard to irrigated lands, and a delegation was accordingly sent to Vancouver by the Victorian Government to arrange for a special excursion of land-seekers, who arrived in Australia early in May, 1912. Many of them have since taken up land in the irrigable areas and other portions of the State. It appears likely that the success of the Victorian experiment will result in definite steps being initiated by the other States of the Commonwealth to attract population from similar sources.

(v.) *Uniform Rates for State-aided Immigrants.* The matter of State-aided immigration to Australia was discussed at the Premiers' Conference, held in Melbourne early in 1912, and this resulted, amongst other things, in the fixing of a scale of minimum rates of passage money which immigrants to any of the States would be charged in future, such rates to operate as from 31st March, 1912. It was expressly agreed, however, that, while no State should charge a lower amount than those mentioned, no objection would be made to higher rates being imposed. The minimum scale of passage rates arranged at the Conference is as follows:—(a) Farmers, farm hands, skilled artisans, and all nominated, assisted, or indentured male immigrants, £6. (b) Adult females, £3. (c) Children of immigrants under 12 years of age, £1 10s. Age limits for all State-aided immigrants were also fixed as follows:—(a) Males, married women and widows, 45 years. (b) Single women, 35 years. The only free immigrants to be those whom the shipping companies carry free. It was also arranged that the maximum bonus payable to immigration agents be as follows:—(a) Per adult, £1: per child under 12 years, 10s. (b) In the case of an assisted immigrant recruited by an agent nominating his wife and family within twelve months of his arrival in the State, a similar bonus on account of the wife and family be paid to the agent. (c) In the cases of immigrants with capital of £200 and over, which capital is deposited with the Agent-General for transmission to the State, an additional bonus of 1 per cent. to the agent on the capital so deposited.

3. Initiation of Commonwealth Scheme.—For the financial year 1912-13 a sum of £50,000 was voted to the Commonwealth Department of External Affairs for advertising the attractions of Australia for settlers, farm workers, and tourists. The State Immigration Bureaux co-operate with the Department of External Affairs in keeping the High-Commissioner for Australia in London advised as to the openings for agricultural workers, and as to general information concerning matters of interest to intending settlers. A press advertising campaign has been initiated, the Commonwealth carrying on the general advertising of Australia by means of paragraphs and illustrated articles in British, European, and American publications, while the several States advertise for the class of immigrants they specially require. Bioscope films are utilised for the illustration of lectures. Exhibitions are held throughout the chief rural districts and at the important agricultural shows in Great Britain, and handbooks for settlers and tourists, as well as folders and other publications, have been issued. Pictorial posters are also utilised.

4. The High Commissioner for Australia and the Agents-General.—Intending settlers or immigrants may, on application, obtain information from the High Commissioner for Australia—

THE RIGHT HON. SIR G. H. REID, P.C., G.C.M.G., ETC.
COMMONWEALTH OFFICES,
72 VICTORIA STREET,
LONDON, S.W.

Information regarding individual States may be obtained from the officials specified below:—

AUSTRALIAN AGENTS-GENERAL.

<i>New South Wales</i>	Sir T. A. COGHLAN ...	123-125 Cannon St., London, E.C.
<i>Victoria</i> ...	Hon. PETER MCBRIDE ...	Melbourne Place, Strand, London
<i>Queensland</i> ...	Major Sir T. B. ROBINSON,	Marble Hall, 409-10, Strand, London
<i>South Australia</i>	HON. A. A. KIRKPATRICK ...	85 Gracechurch St., London, E.C.
<i>Western Australia</i>	Sir NEWTON J. MOORE,	
	K.C.M.G. ...	15 Victoria St., Westminster, London
<i>Tasmania</i> ...	Hon. SIR J. MCCALL, M.D.	56 Victoria St., Westminster, London

(B) The Regulation of Immigration into Australia.

1. **Pre-Federal Restrictions.**—(i.) *Alien Races.* The several States of Australia had regarded it as desirable, long prior to Federation, to impose certain restrictions upon the admission of persons wishing to become inhabitants of those States. The influx of Chinese, for example, was limited by stringent statutes, and later general Acts were passed in some of the States which had the effect of restricting the immigration of other—principally Asiatic—races.

(ii.) *Undesirable Immigrants.* Further restrictions were placed upon the admission of persons who were undesirable as inhabitants, either for medical or moral reasons, or who were likely to be an economic burden upon the community.

2. **Powers and Legislation of the Commonwealth.**—(i.) *Constitutional Powers.* By Chap. I., Pt. V., Sec. 51, xxvii. and xxviii. of the Commonwealth Constitution Act the Parliament of the Commonwealth is empowered to make laws with respect to immigration and emigration and the influx of criminals. (See page 26 herein.)

(ii.) *Legislation.* The powers above specified have now been exercised by the Commonwealth Government, and the laws passed in pursuance thereof supersede the State laws above referred to.

The first Act passed, dealing with this matter, was the Immigration Restriction Act 1901, which contained provisions restricting the immigration of the classes of persons mentioned above. This Act, which contained clauses restricting the immigration of persons under contract, was subsequently repealed by the Contract Immigrants Act 1905, which amended and was substituted for the original Act, but both these Acts have since been amended by the Immigration Restriction Acts of 1908 and 1910, and the Immigration Act of 1912. The immigration of alien races and undesirable persons is now regulated by Immigration Acts 1901-12. Admission of immigrants under contract to perform manual labour is, however, still controlled by the provisions of the Contract Immigrants Act 1905, and will be permitted if the contract is in writing, is made by or on behalf of some person named, who must be resident in Australia, and approved by the Minister. Such approval will not be given if the contract is made with the view of affecting an industrial dispute or if the remuneration and other terms are not as advantageous to the contract immigrant as those current for workers of the same class at the place where the contract is to be carried out.

There is an additional provision where the proposed immigrant is not a British subject born in the United Kingdom or descendant of such a person. In such case it has to be proved that there is a difficulty in the employers obtaining in the Commonwealth a worker of at least equal skill and ability.

In case of infraction of the law it is provided that the contract is absolutely void and the immigrant and employer are both liable to penalties, and the employer is also liable to pay the immigrant until he obtains employment, or, at the option of the immigrant, to provide expenses for his return to the country whence he came.

3. Prohibited Immigrants.—(i.) *Provisions of the Acts.* Persons comprised in the following classes are prohibited from entering the Commonwealth, viz. :—(a) Any person who fails to pass the dictation test; that is to say, who fails to write out not less than fifty words of a language prescribed by regulation when dictated to him by an officer administering the Act. (b) Any person not possessed of the prescribed certificate of health. (c) Any idiot, imbecile, feeble-minded person, or epileptic. (d) Any person suffering from a serious transmissible disease or defect. (e) Any person suffering from pulmonary tuberculosis, trachoma, or with any loathsome or dangerous communicable disease, either general or local. (f) Any person suffering from any other disease or mental or physical defect, which from its nature is, in the opinion of an officer, liable to render the person concerned a charge upon the public or upon any public or charitable institution. (g) Any person suffering from any other disease, disability, or disqualification which is prescribed. (ga) Any person who has been convicted of a crime and sentenced to imprisonment for one year or more, unless five years have elapsed since the termination of the imprisonment. (gb) Any person who has been convicted of any crime involving moral turpitude, but whose sentence has been suspended or shortened conditionally on his emigration, unless five years have elapsed since the expiration of the term for which he was sentenced. (gc) Any prostitute, procurer, or person living on the prostitution of others.

Regarding (a) it may be stated that the Act of 1901 provided for the dictation of not less than fifty words of a European language. The Act of 1905 provided for the retention of this test until regulations be passed prescribing the languages to be employed. No such regulations have yet been made, and the provision of the Act of 1901 is therefore *de facto* still in force. It may be stated that in general practice the dictation test is not and never has been imposed upon persons of European race.

Regarding (b), the Amending Act of 1912 provides for the establishment of Commonwealth Medical Bureaux at places outside the Commonwealth, and the appointment of medical referees to examine intending immigrants and issue certificates of health in the prescribed form, on payment of a prescribed fee. A chief medical officer has already been appointed to take charge of the Bureaux attached to the High Commissioner's Office in London. He will arrange for the selection of suitable medical referees for appointment to act at various centres throughout the United Kingdom.

Provision is also made for the medical examination of, and the issue of certificates of health to intending immigrants who embark at a port where there is no medical referee, or who arrive in the Commonwealth without a certificate in the prescribed form.

Pending the proper organisation in the United Kingdom of the Medical Bureaux and the appointment of medical referees, the requirement that immigrants must produce a certificate of health on arrival in Australia will not be enforced.

(ii.) *Exemptions.* To these restrictions there are the following exemptions, viz. :—(a) Any person holding an exemption certificate. (b) Members of the King's regular land and sea forces. (c) The master and crew of any public vessel of any Government. (d) The master and crew of any other vessel landing during the stay of the vessel in a Commonwealth port. The exemption of members of a crew during the vessel's stay in port is subject to the production of identification cards to an officer on demand. This provision will not be enforced in respect of white members of a crew, but there is a further provision which empowers an officer to refuse any member of a crew permission to land unless he is satisfied that such person is free from a communicable disease. Before the ship can obtain her outward clearance the crew must, at the demand of an officer administering the Act, be mustered, and if any member of the crew be missing,

and would otherwise, in the opinion of the officer, have been a prohibited immigrant, then such person is deemed to be a prohibited immigrant, and until the contrary be proved, to have entered the Commonwealth contrary to the Act. (e) Any Commissioner of, or other person accredited from, the Imperial or any other Government.

(iii.) *General Provisions.* An immigrant may be required to pass the dictation test at any time within two years after he has entered the Commonwealth. This applies particularly to coloured persons, but any immigrant found within three years of entering the Commonwealth to be suffering from a prohibitory disease or defect may be deemed to be a prohibited immigrant unless it is proved to the Minister's satisfaction that he was free from the disease or disability at the time of his arrival in Australia.

A prohibited immigrant within the meaning of (a) above may, at the discretion of an officer, be allowed to enter the Commonwealth, or to remain within it, upon depositing £100 and within thirty days either obtaining an exemption certificate or departing from the Commonwealth; in either case the deposit is returned.

The punishment for breach of the Act by a prohibited immigrant is imprisonment for six months and deportation in addition to or in substitution for such imprisonment, if so ordered.

4. Liability of Shipmasters and Others.—The master, owners, agents, and charterers of a vessel from which a prohibited immigrant enters the Commonwealth are jointly and severally liable to a penalty not exceeding £100 for each entrant. The vessel may be detained as security, but may be released upon the giving of a bond with two sureties for the payment of any penalties; the vessel may be seized and sold in default of payment of penalties. The master, owners, agents, and charterers may be required to provide a return passage for the prohibited immigrant, and to pay for his maintenance during his detention prior to deportation. Masters of vessels are authorised to prevent such a person from landing and to obtain any necessary assistance.

Under the Immigration Restriction Act 1908, any person on board a vessel at the time of her arrival from any place outside Australia at any port in Australia who is not (a) a *bonâ fide* passenger of the vessel, or (b) a member of the crew of the vessel whose name is on the articles, is deemed to be a stowaway, unless the master gives notice that the person is on board the vessel, and does not permit him to land until an officer has had an opportunity of satisfying himself that the person is not a prohibited immigrant. The master, owners, agents, and charterers of a vessel are jointly and severally liable to a penalty of £100 for each stowaway brought in to any port in Australia. The Immigration Act 1912 provides for a penalty of £200 for each stowaway in cases where the master has been convicted of a similar offence within the preceding twelve months. Power is given to search vessels for stowaways. The Immigration Restriction Act 1910 provides penalties for being concerned in bringing immigrants secretly to the Commonwealth.

5. Agreements with other Countries.—Arrangements may be made with the Government of any country regulating the admission into Australia of the subjects or citizens of such country, such subjects not being, during the subsistence of the arrangement, required to pass the dictation test.

Persons who have resided either continuously or from time to time in the Commonwealth for a period of five years in the whole, and who are about to depart from it, being persons who, if they return, would be prohibited immigrants, may obtain a certificate of exemption entitling them to return.

Certificates of exemption are granted by the Minister of External Affairs, whose department administers the Act, and also by the Collector of Customs in each State.

6. Statistics.—The following tables shew the number of persons who desired but were not permitted to land, those who were allowed to land, and the nationality of the persons admitted.

**PERSONS ADMITTED OR REFUSED ADMISSION TO COMMONWEALTH UNDER
PROVISIONS OF IMMIGRATION RESTRICTION ACT, 1905 to 1913.**

Year.	Persons Admitted who Passed Education Test.	Persons Admitted without Passing Education Test.	Persons Refused Admission.
1905	3	47,940	106
1906	Nil	57,646	53
1907	Nil	72,089	62
1908	1	75,670	108
1909	1	83,324	108
1910	...	94,543	42
1911	Nil	139,020	83
1912	Nil	163,990	187
1913	Nil	140,251	109

NATIONALITY OF PERSONS ADMITTED, 1905 to 1913.

Nationality.	1905.(a)	1906.(b)	1907. (b)	1908.(a)	1909.(a)	1910.(b)	1911.(b)	1912.(b)	1913.b
	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.	Without Test.
EUROPEANS—									
Austrians	683	691	651	736	895	815	1,184	855	794
Belgians	25	33	64	45	35	50	84	95	63
British	39,975	47,396	60,172	64,374	71,201	81,457	124,061	146,692	122,443
Danes	125	259	280	227	272	269	393	371	444
Dutch	43	91	94	120	187	175	307	435	288
French	1,402	1,866	1,685	1,546	1,347	1,160	1,166	1,238	1,491
Germans	926	1,339	1,909	1,911	2,109	2,449	2,517	3,501	3,155
Greeks	131	240	202	296	327	360	583	736	480
Italians	734	839	992	902	1,078	883	1,365	1,632	1,963
Maltese	...	5	...	22	24	11	34	17	7
Poles	13	3	6	5	10	3	6	9	25
Portuguese	2	3	6	12	11	3	13	24	9
Rumanians	...	...	...	...	...	...	...	...	...
Russians	157	293	388	349	466	735	994	1,159	1,334
Scandinavians	281	776	1,173	825	891	1,240	1,384	1,303	1,285
Spaniards	35	32	187	57	56	49	128	118	116
Swiss	63	68	78	78	131	109	130	209	202
Turks	3	8	6	4	14	10	10	6	5
Other Europeans (c)	17	18	29	112	16	22	27	(d) 57	5
AMERICANS—									
N. Americans	603	867	899	687	692	746	914	1,386	1,713
S. Americans	...	13	15	10	14	13	17	37	14
American Indians	...	...	...	...	...	...	31	9	...
Negroes	15	4	9	4	6	14	13	47	7
West Indians	3	...	13	23	6	13	11	8	1
ASIATICS—									
Afghans	7	3	9	15	3	2	14	17	7
Arabs	3	...	8	13	1	1	1	18	14
Burmese	...	...	...	...	1	...	...	...	1
Chinese	1,269	1,134	1,424	1,771	1,729	1,817	2,009	2,250	2,286
Cingalese	15	6	12	10	10	14	4	17	8
East Indians	...	...	...	...	...	...	...	...	...
Eurasians	...	...	...	...	6	14	7	13	2
Filipinos	...	120	57	27	37	66	17	13	12
Hindoo	74	75	129	74	130	156	188	157	187
Japanese	251	356	521	555	509	610	459	698	822
Javanese	62	52	1	...	52	4	12	6	3
Malays	289	436	370	230	309	304	479	326	303
Syrians	51	66	58	45	73	95	104	75	31
OTHER RACES—									
Maoris	1	2	8	48	108	62	31	32	41
Mauritians	...	...	...	3	3	4	9	2	7
Pacific Islanders	98	156	121	89	94	54	69	92	105
Papuan	415	368	493	430	439	622	139	196	171
St. Helena Blacks	...	...	...	1	1	...	...	...	...
Unspecified	33	32	30	14	31	141	(e) 65	102	(f) 214
Total	47,940	57,646	72,089	75,670	83,324	94,543	139,020	163,990	140,251

(a) Three persons were admitted, after passing the test, in 1905, and one in each of the years 1908 and 1909. (b) No persons were admitted after passing the test in this year. (c) Not specified. (d) Bulgarians. (e) Including 63 Timorese. (f) Including 142 Timorese.

The following table has been prepared, shewing to what extent immigration has taken place into the several States of the Commonwealth from 1905 to 1913 :—

IMMIGRATION INTO THE SEVERAL STATES OF THE COMMONWEALTH, 1905-1913.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	C'wealth.
1905	28,323	9,545	1,946	1,843	4,386	1,718	179	47,940
1906	35,987	10,555	2,459	1,909	4,798	1,801	187	57,646
1907	46,022	12,314	3,862	2,544	4,839	2,380	128	72,089
1908	48,068	12,840	4,474	2,788	5,142	2,171	187	75,670
1909	51,170	13,602	6,720	3,169	6,343	2,172	148	83,324
1910	53,029	14,942	10,353	3,988	9,881	2,168	182	94,543
1911	69,640	21,488	17,778	7,039	18,386	4,563	126	139,020
1912	86,239	34,568	11,820	10,035	16,624	4,480	224	163,990
1913	73,946	29,121	10,496	8,220	15,985	2,350	133	140,251

§ 2. Patents, Trade Marks, and Designs.

1. Devolution of Jurisdiction upon the Commonwealth.—Prior to the establishment of Federation, and for a few years thereafter, each Australian State possessed independent jurisdiction in respect of patents, copyrights, trade marks, and designs, and had, with the exception of Tasmania in regard to copyrights, enacted its own laws. Any person, therefore, who desired to obtain the grant of a patent, or the registration of any copyright, trade mark, or design had necessarily, with the exception aforesaid, to incur the trouble and expense of making separate applications. The Commonwealth Constitution Act conferred upon the Federal Parliament power to legislate respecting these matters. (See page 26 hereinbefore.) The Patents Act of 1909 applied the laws relating to patents for inventions to the Territory of Papua.

The State Acts, though in general based upon the Imperial Statutes dealing with these subjects, were not wholly governed by them. The Commonwealth Acts, both in regard to principle and practice, have the same general foundation as the Imperial Statutes, but in some respects have been modified and brought into line with the totality of Australian experience.

2. Patents.—The first Commonwealth Patents Act was passed in 1903, and was amended in 1906, 1909, and 1910. (See page 44 hereinbefore.) Under these Acts, which are administered by a "Commissioner of Patents," the powers and functions vested under the States Acts became vested in the Commonwealth. A single Commonwealth patent now gives throughout the Commonwealth and the Territory of Papua that protection which formerly could only be obtained by procuring a patent in each State and the said Territory. The rights of State patentees or the patentees in the Territory of Papua are in all cases reserved to them. The holder of a State patent in force may obtain, for period not exceeding the unexpired time thereof, a Commonwealth patent for the invention comprised in the State patent, provided however, that any State other than the State in which the patent under the States Patent Act was granted may be excepted from the patent if the Commissioner of Patents is satisfied that the invention either (a) is not novel, (b) has been made the subject of a pending application, or (c) has been published, in such State. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth and the Territory of Papua, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees as may be allowed.

(i.) *Applications for Patents.* Any of the following persons may make application for a patent:—(a) The actual inventor. (b) His assignee, agent, attorney, or nominee. (c) The actual inventor or his nominee jointly with the assignee of a part interest in the invention. (d) The legal representative of a deceased actual inventor or of his assignee. (e) Any person resident in the Commonwealth to whom the invention has been communicated by the actual inventor, his legal representative, or assignee (if the actual inventor, his legal representative, or assignee is not resident in the Commonwealth). An application for a patent must be for one invention only, and must be made in the form prescribed, and lodged by being left at or sent by post to the Patent Office at Melbourne. It must be accompanied by either a provisional or a complete specification. The application must contain a declaration in the prescribed form setting out the facts relied on to support the application, and must be signed by the applicant before a witness.

(ii.) *Term for which Granted.* The term for the duration of every patent is limited to fourteen years from the date of application. A patent ceases if the patentee fails to pay the renewal fee within the prescribed time.

(iii.) *Opposition to Grant of Patent.* Within three months of the advertisement of the acceptance of a complete specification, or within such further time, not exceeding one month, as the Commissioner on application made within the three months allows, any person may give notice at the Patent Office of opposition to the grant on any of the following grounds:—(a) That the applicant has obtained the invention from the opponent or from a person of whom he is the legal representative or assignee or nominee. (b) That the invention has not been communicated to the applicant by the actual inventor, his legal representative or assignee (if the actual inventor, his legal representative or assignee is not resident in the Commonwealth). (c) That the invention has been patented in the Commonwealth on an application of prior date or has been patented in a State. (d) That the complete specification describes or claims an invention other than that described in the provisional specification, and that the opponent has applied for a patent for such other invention in the interval between the leaving of the provisional and complete Specifications. (e) Want of novelty. (f) Prior publication.

The case is heard and decided by the Commissioner, from whose decision an appeal lies to the High Court or to the Supreme Court of the State in which the Patent Office is situated.

(iv.) *Single Patent for Cognate Inventions, etc.* The provisions of the Act relative to single patents for cognate inventions, patents of addition and revocation of patents will be found in detail in previous issues of the Year Book. (See No. 6, p. 1163.)

(v.) *Compulsory Working and Licenses.* At any time not less than four years after the date of a patent, and not less than two years after the 13th December, 1911, any person may apply to the High Court or the Supreme Court of the State in which the Patent Office is situated for an order declaring that the patent article or process is not manufactured or carried on to an adequate extent in the Commonwealth. From and after the time when any such order may take effect, the patent is not deemed to be infringed by the manufacture or carrying on in the Commonwealth of the patented article or process, or by the vending within the Commonwealth of the patented article made within the Commonwealth. Any person interested may, after the expiration of two years from the granting of the patent, present a petition to the Commissioner alleging that the reasonable requirements of the public with respect to a patented invention have not been satisfied and praying for the grant of a compulsory license or, in the alternative, for the revocation of a patent. If the parties do not come to an arrangement between themselves, the Commissioner, on being satisfied that a *prima facie* case has been made out, must refer the petition to the High Court or the Supreme Court of the State in which the Patent Office is situated. If the Commissioner is not satisfied that a *prima facie* case has been made out he may dismiss the petition.

(vi.) *Restoration and Surrender of Patents, and Contracts and Proceedings.* The provisions of the Act with reference to restoration and surrender of patents, contracts, etc., are given in detail in previous issues of the Year Book. (See No. 6, p. 1164).

(vii.) *International Protection of Patents.* The Patents Act contains provisions under which the international arrangements for the protection of patents contained in the Imperial Acts could be made applicable to the Commonwealth by order of the King-in-Council. Applicants for patents, subject to the country in which first application is made being a party to the arrangement, are now, if they apply in Australia within twelve months of their first foreign application, entitled to make application for patents for their inventions in priority to other applicants, and such patents have the same date as the date of the first application abroad. Corresponding arrangements have also been made by the Commonwealth with New Zealand.

(viii.) *Patent Attorneys.* Any person on passing the prescribed examination, and on paying a fee of £5, may be registered by the Commissioner as a patent attorney. A solicitor may practise as a patent attorney without passing the prescribed examination and without being registered as a patent attorney. No person may describe himself as a patent attorney, or as a patent agent, or as an agent for obtaining patents unless he is registered or entitled to practise as a patent attorney.

(ix.) *Patent Office Publications.* Complete specifications are printed shortly after they become open to public inspection by advertisement of acceptance, or under Section 121 of the Act, provided the complete specification is not accepted and advertised. Each specification is open to public inspection. A number of publications, of which a list may be found in the Australian Official Journal of Patents, is on sale at the Government Printing Office, Melbourne.

The *Australian Official Journal of Patents* is issued weekly, and contains lists of applications and proceedings, with illustrated notes of accepted complete specifications. A supplementary annual volume contains statistics, indexes to names of persons concerned, classified indexes to subject matter of applications lodged, and a numerical index to proceedings on Commonwealth applications which have been advertised during the year; there are also names and number indexes to proceedings on State applications.

(x.) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The numbers of individual inventions in respect of which applications were filed in the States or Commonwealth during each year from 1907 to 1913 inclusive are shewn in the following table. The number of applications accompanied by provisional specifications and the number of patents sealed in respect of applications made in each year are also shewn.

PATENTS.—APPLICATIONS FILED AND LETTERS PATENT SEALED IN THE
COMMONWEALTH, 1907 to 1913.

Year	1907.	1908.	1909.	1910.	1911.	1912.	1913.
No. of Applications accompanied by provisional specifications	2,903	2,840	3,309	3,605	3,497	4,071	4,163
Letters patent sealed during each year	1,402	1,630	1,269	1,552	2,027	1,502	1,495*

* Up to the 30th December, 1913.

(xi.) *Revenue of Patent Office.* The revenue of the Commonwealth Patent Office for each year from 1907 to the end of the year 1913 is shewn in the subjoined table :—

REVENUE OF COMMONWEALTH PATENT OFFICE, 1907 to 1913.

Particulars.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£	£
Fees collected under							
States Patents Acts ...	3,746	2,006	1,703	1,940	768	118	50
Patents Acts 1903-10 ...	13,612	14,146	14,087	17,042	19,640	18,542	18,800
Receipts from publications	155	146	216	208	237	305	283
Petty receipts ...	34	32	33	33	48	50	49
Total ...	17,547	16,330	16,039	19,223	20,693	19,015	19,182

3. **Trade Marks.**—The remarks made concerning the unification of the patent system of the Commonwealth apply equally to trade marks. Under the Trade Marks Act 1905, which came into force on the 2nd July, 1906, the Commissioner of Patents is appointed to act also as “Registrar of Trade Marks.” The Trade Marks Act of 1905 was amended by the Patents, Trade Marks, and Designs Act 1910, assented to on the 14th November, 1910, and by the Trade Marks Act 1912, and is now cited as The Trade Marks Act 1905-1912. The principal objects of the amending Act were to enlarge the scope of marks capable of registration, and repeal the provisions of the Act of 1905 relating to the “Workers Trade Mark,” the provisions regarding which were held to be unconstitutional. Special provisions for the registration of a “Commonwealth Trade Mark” are contained in the Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that in their opinion the conditions as to remuneration of labour in connection with their manufacture are fair and reasonable.

(i.) *Essential Particulars of Trade Marks.*—

Section 15. “A registrable trade mark shall consist of essential particulars with or without additional matter.”

Section 16. (1) “A registrable trade mark must contain or consist of at least one of the following essential particulars:—(a) The name of a company, individual, or firm represented in a special or particular manner; (b) the signature of the applicant for registration or some predecessor in his business; (c) an invented word or invented words; (d) a word or words having no direct reference to the character or quality of the goods, and not being according to its signification a geographical name or a surname; (e) any other distinctive mark, but a name, signature, or word or words, other than such as fall within the descriptions in the above paragraphs (a), (b), (c) and (d) shall not, except by order of the Registrar, Law Officer, or Court, be deemed a distinctive mark.”

(2) “For the purposes of this section ‘distinctive’ means adapted to distinguish goods of the proprietor of the trade mark from those of other persons.”

(3) “In determining whether a trade mark is so adapted, the Registrar, Law Officer, or Court may, in the case of a trade mark in actual use, take into consideration the extent to which such user has rendered such trade mark in fact distinctive for the goods with respect to which it is registered or proposed to be registered.”

(ii.) *State Registrations.* State registrations cease to be in force at the expiration of fourteen years from the date of the Commonwealth Act, or at the time when, under the State Trade Marks Act, the trade mark would, if after the commencement of the Commonwealth Act no fee for the continuance of its registration were paid, first become liable to removal from the register, whichever first happens. It is also provided that no fee shall be receivable nor shall any act be done after the commencement of the Commonwealth Act for the continuance of the registration of a trade mark under a State Act. Commonwealth registration of a State registered mark may be effected, and the fact of its registration in a State prior to the coming into force of the Commonwealth Act, may entitle the registered proprietor in the State to Commonwealth registration, notwithstanding the existence of defects which might be ground for refusal of an application for the registration of a new trade mark.

(iii.) *Duration of Registration and General Provisions.* The registration of a trade mark is for a period of fourteen years, but may be renewed from time to time. International and intercolonial arrangements for the mutual protection of trade marks may be made in a manner similar to that provided for the protection of patents. In this regard Australia has become a party to the International Convention for the protection of industrial property. Registration may be opposed by any person lodging a notice of opposition at the Trade Marks Office within three months after the advertisement of the application, or such further time, not exceeding three months, as may, on application made within the first three months, be allowed.

(iv.) *Publications.* The *Australian Official Journal of Trade Marks* is issued weekly, and contains lists of applications and proceedings, with representations of marks (when accepted) sought to be registered. *Designs.* Lists of registered owners of designs and the subject matter of applications are published weekly in the official Journal of Trade Marks. Indexes to names of applicants and subject matter of applications are compiled and are on sale.

4. Designs.—The Designs Act of 1906 came into operation on the 1st January, 1907, being subsequently amended by the Patents, Designs and Trade Marks Acts 1910, and the Designs Act 1912, and is now cited as the Designs Act 1906-12. Under this Act a Commonwealth Designs Office has been established and the Commissioner of Patents appointed "Registrar of Designs."

(i.) *Registration.* Any new and original design which has not been published in Australia before the lodging of an application for its registration may be registered in respect of all or any of the articles enumerated in the classification contained in the regulations, which comprise jewellery, paperhangings, carpets, floor-cloths, lace, hosiery, millinery, wearing apparel, textile fabrics, bookbinding, and articles composed wholly or chiefly of a variety of solid substances. A separate application must be made in respect of each class in which the owner of the design desires it to be registered. After an application for the registration of a design has been lodged the design may be published and used without prejudice to the validity of the registration.

(ii.) *Duration of Copyright in Designs.* The registration takes effect as from the date of the lodging of the application, and, subject to the provisions of the Act, remains in force for a period of five years from that date. Provision is made by the amending Act of 1912 for an extension of the period of registration to 15 years, subject to applications for extension being made and the prescribed fees paid before the expiration of 5 and 10 years respectively. The owner of a registered design must within two years after registration, substantially use the design, or cause it to be used, in Australia, and if he fails to do so the copyright ceases. If, however, such design is used in any manufacture abroad, the above period is limited to six months.

(iii.) *General.* The Act also contains provisions regarding the remedies for infringement of designs and the rectification of the register. Arrangements for the international and intercolonial protection of copyright in designs were made by the same proclamation referred to above with regard to patents and trade marks. The owner of a registered design must cause each article to which the design is applied to be marked before delivery for sale with the prescribed mark to denote that the design is registered.

5. Applications for Trade Marks and Designs.—The following table gives particulars of trade mark and design applications received and registered under the Commonwealth Acts from 1908 to 1913 inclusive:—

**TRADE MARK AND DESIGN APPLICATIONS RECEIVED AND REGISTERED
UNDER COMMONWEALTH ACTS, 1908 to 1913.**

Applications.			1908.	1909.	1910.	1911.	1912.	1913.
RECEIVED.								
Trade Marks	...	...	1,580	1,688	1,729	1,977*	1,803	1,957
Designs	...	...	155	187	186	203	235	301
REGISTERED.								
Trade Marks	...	...	3,150	1,455	1,190	1,923	1,389	1,468
Designs	...	...	180	166	160	180	211	281

The following table shews the revenue of the Trade Mark and Design Office during the years 1910 to 1913 :—

REVENUE OF TRADE MARK AND DESIGN OFFICE, 1910 to 1913.

Particulars.	1910.			1911.			1912.			1913.		
	Trade Marks.	Design's	Publi-cations	Trade Marks.	Design's	Publi-cations	Trade Marks.	Design's	Publi-cations	Trade Marks.	Design's	Publi-cations
Fees collected under State Acts	£ 164	£ ...	£ ...	£ 56	£ ...	£ ...	£ 67	£ ...	£ ...	£ 33	£ ...	£ ...
Fees collected under Commonwealth Acts	4,655	171	90	5,018	180	127	5,012	198	98	5,260	293	123
Total	4,819	171	90	5,074	180	127	5,079	198	98	5,298	293	123

§ 3. Copyright.

1. Copyright Legislation.—Prior to the 1st January, 1907, the date on which the Commonwealth Copyright Act of 1905 came into operation, the subject of copyright was regulated by the laws of the separate States. In general, the State Laws were under the like provisions of the Imperial Copyright Law, including the Law of 1842 and the earlier unrepealed or subsequent Acts, the most important of which were the Colonial Copyright Act 1847 and the International Copyright Act of 1886. They were also generally included under British international relations embracing the Berne-Paris provisions of the International Copyright Union and the reciprocal relations with the United

States of America, but, with the exception that in the Austria-Hungary Treaty, New South Wales and Tasmania were not parties, because they did not exercise the right of ratification especially reserved to individual colonies.

Though the Commonwealth Copyright Act of 1905 took the place of the State Copyright Acts formerly in force, it left unaffected existing rights under the State Laws, but transferred the administration thereof to the Commonwealth. Provision was also made under the Law of 1905 for the registration of International and State Copyrights. In order to obtain local, as distinguished from British or Imperial, protection, the Act required that a book must have been "printed from type set up in Australia, or plates made therefrom, or from plates or negatives made in Australia in cases where type is not necessarily used," and published in Australia, after the commencement of the Act, before or simultaneously with its first publication elsewhere. The "Common Law of England" was specifically applied to unpublished literary compositions. Artistic works were not protected in Australia under either the Commonwealth Act of 1905 or Imperial Law unless "made in Australia."

Copyright in the case of literary works endured for a period of forty-two years from the date of first publication, or the life of the author or the last surviving joint-author and seven years thereafter, whichever was the longer. If, however, first publication of a book took place after the death of the author the duration of copyright was limited to forty-two years. Performing right and lecturing right subsisted separately for a like period from first public performance or delivery simultaneously with first public performance or delivery elsewhere. But the lecturing right ceased when the lecture was published as a book. Copyright in artistic works subsisted for the term of forty-two years from the date of the making thereof, or for the author's life and seven years, whichever was the longer.

Provision was also made for the assignment of copyright, performing right, and lecturing right, either wholly or in part, and either generally or limited to any particular place or period, and owners of any of the rights specified could grant any interest therein by licence; but such an assignment or grant would not be valid unless it was in writing, signed by the owner of the right.

The Act of 1905 prohibited the importation of all pirated books or artistic works "in which copyright is subsisting in Australia (whether under this Act or otherwise)," and provided for the forfeiture of such works, on condition of written notice of the copyright by the owner of the copyright or his agent to the Minister, directly or through the Commissioners of Customs of the United Kingdom.

Registration of any copyright, performing right, or lecturing right was required as a prerequisite for legal action, but copyright and performing right existed, and in some cases could be enforced, without registration.

2. The Copyright Act of 1912.—The Copyright Act of 1905 was repealed by the Copyright Act of 1912, which was assented to and became operative on 20th November, 1912. Subject to modifications relating to procedure and remedies, the Commonwealth Law of 1912 adopted the British Copyright Act of 1911, and declared the latter law to be in force within the Commonwealth as from the 1st July, 1912. The British Act extends throughout the whole of His Majesty's dominions, but is not to be in force in a self-governing dominion unless enacted by the legislature thereof either in full or with modifications relating exclusively to procedure and remedies necessary to adapt the Act to the circumstances of the dominion.

Under the Commonwealth Law of 1912, copyright subsists in "every original literary, dramatic, musical, and artistic work," first published within parts of His Majesty's dominions to which the British Copyright Act of 1911 extends, and in the case of an unpublished work, the author of which was "at the date of the making of the

work," a British subject or a resident domiciled within the aforesaid parts of His Majesty's dominions (or under protection through international copyright provisions). The old Common Law right is abrogated by the Act of 1912, and all copyright property is now the creature of statute from the date when it takes shape, either written in words or in some other material form.

Copyright is defined to mean the sole right to produce or reproduce the work or any substantial part thereof in any material form whatsoever, or any translation thereof, to publish, perform, or deliver the work in public, to dramatize or novelize it, and in the case of a literary, dramatic, or musical work, to make any record, cinematograph film or other contrivance by means of which it may be mechanically performed or delivered, or to authorize any of such acts. Architectural works of art are included as to design, but not as to process or methods of construction.

Copyright in a musical work also includes the sole right to make any record, perforated roll, or other contrivance by means of which the work may be mechanically performed or delivered, and to authorize any of such acts. Conditions governing the making of mechanical contrivances of musical works published before and after the commencement of the British Act are separately prescribed. In the case of a musical work published after the commencement of said Act, if the work has already been mechanically performed with the consent of the owner of the copyright, then anyone can make mechanical contrivances for reproducing it by giving the notice and paying royalties as prescribed. But such contrivances must not alter or omit anything from such work unless similar alterations have been made by the author himself, or they are reasonably necessary for the adaptation of such contrivance. In the case of a musical work published before the commencement of the British Act, certain modifications are prescribed.

The author of a work is the first owner of the copyright therein, except in the case of mechanical contrivances made before the commencement of the Act, or where an engraving, photograph, or portrait is executed on commission, or "where the author was in the employment of some other person under a contract of service or apprenticeship, and the work was done in the course of his employment by that person." Copyright in Government publications vests in the Crown.

The owner may assign the copyright "either wholly or partially, and either generally or subject to limitations to the United Kingdom, or any self-governing dominion or other part of His Majesty's dominions to which the British Copyright Act extends, and either for the whole term of the copyright or for any part thereof, and may grant any interest in the right by licence, but no such assignment or grant shall be valid unless it is in writing signed by the owner of the right in respect of which the assignment or grant is made, or by his duly authorized agent." In the case of partial assignment, the original owner and the assignee become respectively the owners of the residual and assigned portions of the copyright. But an assignment, except by will, becomes null and void twenty-five years after the death of the author, when the entire right reverts to his heirs.

Copyright subsists during the life of the author and fifty years after his death, provided that at any time after the expiration of twenty-five years, or in the case of a work subsisting at the date of the passing of the Imperial Copyright Act 1911 (*i.e.*, 16th December, 1911), thirty years after, anyone on giving the requisite notice and paying royalties of ten per cent. on the published price has the right to publish the work. In the case of works of joint authorship, copyright subsists during the life of the author who dies first and for a term of fifty years afterwards, or during the life of the author who dies last, whichever period is the longer. In the case of posthumous works, copyright subsists for fifty years from first publication or performance, whichever is the earlier. Photographs are protected for fifty years from the date of the making of the original

negative, and records, perforated rolls, etc., for mechanical musical instruments for fifty years from the date of making of the original plates. Copyright in Government publications subsists for a period of fifty years from the date of first publication.

Works in which copyright subsisted immediately before the commencement of the British Act, *i.e.*, 1st July, 1912, shall, as from that date, be entitled to the substituted rights prescribed by the Act, including the extended term. The Act also reserves (in default of compensation by the person entitled to restrain production or performance) to anyone who has before the 26th July, 1910, incurred any expenditure or liability in connexion with a then lawful production or performance of a work, any rights or interests arising therefrom, which were subsisting and valuable.

The Commonwealth Copyright Act of 1912 prohibits the importation of pirated literary, dramatic, musical, and artistic works on conditions similar to those prescribed by the repealed Law of 1905.

The owner of any original literary, dramatic, musical, or artistic copyright under the Commonwealth Law, or of the sole right to perform, or authorize the performance, of any musical or dramatic work in the Commonwealth or any part thereof, may obtain registration of his right, on filing an application in the prescribed form at the Copyright Offices, Commonwealth Offices, Melbourne.

3. Applications for Copyright.—The following table gives particulars of copyright applications received and registered under the Commonwealth Acts from 1909 to 1913 inclusive:—

COPYRIGHT APPLICATIONS RECEIVED AND REGISTERED UNDER COMMONWEALTH ACTS, 1909 to 1913.

Year.	Copyrights.			
	Literary.	Artistic.	International and State.	Total.
APPLICATIONS RECEIVED.				
1909	474	518	14	1,006
1910	464	569	6	1,039
1911	440	466	15	921
1912	463	415	8	886
1913	505	340	...	845
APPLICATIONS REGISTERED.				
1909	412	527	4	943
1910	361	495	12	868
1911	379	412	11	802
1912	401	318	10	729
1913	429	245	...	674

The revenue from copyright for the years 1911, 1912 and 1913 was £143, £145 and £169 respectively.

In addition to the applications for copyright received and registered under the Commonwealth Act, certain applications for registration under State Acts were received and registered. The following table gives particulars of such applications for the years 1909 to 1913:—

**APPLICATIONS FOR REGISTRATION OF COPYRIGHT UNDER STATE ACTS,
1909 to 1913.**

Year.	N.S.W.		Victoria.		Queensland.		S. Aust.		W. Aust.		Tasmania.	
	Liter-ary.	Ar-tistic.	Liter-ary.	Ar-tistic.	Liter-ary.	Ar-tistic.	Liter-ary.	Ar-tistic.	Liter-ary.	Ar-tistic.	Liter-ary.	Ar-tistic.

APPLICATIONS RECEIVED.

1909	...	...	8	4	...	...	...	...	...	...	...	...
1910	...	...	2	5	...	...	...	...	...	...	...	...
1911	...	...	1	...	...	...	...	...	...	...	...	...
1912	...	1	1	...	...	...	1	...	...	...	...	...
1913	...	...	...	...	...	...	...	...	...	...	...	...

APPLICATIONS GRANTED.

1909	...	...	9	11	...	...	...	...	...	...	...	...
1910	...	...	2	1	...	...	...	...	...	...	...	...
1911	...	...	1	...	...	...	...	...	...	...	...	...
1912	...	1	1	...	...	...	1	...	...	...	...	...
1913	...	...	...	...	...	...	...	...	...	...	...	...

§ 4. Old-age and Invalid Pensions.

1. **General.**—A system for providing for the relief of the aged poor by some means which did not involve the stigma associated in so many minds with the idea of charitable aid, and which, while protecting the recipients from actual want, still left to them as large a degree of freedom as possible, has long been sought for by economists, statesmen, and social reformers. The difficulties surrounding a satisfactory solution of the question are numerous and great, and various schemes have been propounded with the object of overcoming them. Two of the principal objections which have been urged against the introduction of a general system of old-age pensions are—

- (i.) its costliness;
- (ii.) its tendency to induce thriftlessness.

The former is undoubtedly a serious difficulty, since in any normally constituted population the number of persons aged say sixty-five years and upwards will represent about 5 per cent. of the total population, and the provision of the funds required to pay to these a sum which would provide them with even the barest necessities of life would be a very considerable burden upon the State Treasury. To reduce this burden various suggestions have been made, of which probably the most effective have been those which provide, the one for a contribution to the pension fund by the pensioner during his earlier years, and the other for a reduction of the amount of pension payable to those in receipt of income from other sources. The former of these is the principle which has been acted upon in the scheme in operation in Germany, while the latter is that which underlies the schemes in vogue in the Commonwealth, New Zealand, and the United Kingdom.

The objection which has sometimes been raised to the payment of old-age pensions on the score of the tendency to thriftlessness thereby induced is one which, in Australia, at all events, is not accorded much weight, the general feeling being that the number of cases in which the prospect of a pension of, say, 10s. per week from sixty-five onwards would lead to thriftlessness in earlier years, is so small as to be practically negligible.

2. Introduction of Old-age Pensions into Australia.—The credit of introducing old-age pensions into the Southern Hemisphere belongs, not to the Commonwealth, but to her sister dependency, the Dominion of New Zealand, where pensions have been payable since 1st April, 1893. The first State of the Commonwealth to make provision for the payment of old-age pensions was Victoria, whose legislation on the subject came into operation on 18th January, 1901. Later in the same year, viz., on 1st August, 1901, the pension system of New South Wales came into force, while in the case of Queensland old-age pensions became payable from 1st July, 1908. Finally, an Act providing for the payment of old-age pensions throughout Australia was passed by the Commonwealth Parliament in 1908, pension payments thereunder commencing on 1st July, 1909. This Act superseded the State Acts in so far as provision for old age is concerned.

3. Commencement of Commonwealth Act.—The Commonwealth Invalid and Old-age Pensions Act was assented to on the 10th June, 1908, and payment of old-age pensions commenced as from 1st July, 1909. Provision is also made in the Act for the payment of invalid pensions. The part of the Act relating thereto, however, did not come into operation on the commencement of the Act, but it was provided that it should commence on some subsequent date to be fixed by proclamation. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910.

4. Administration of Commonwealth Act.—The general administration of the Act is, subject to the control of the Minister, placed in the hands of the Commissioner of Pensions, who is assisted by a Deputy Commissioner appointed in each State. Power is given to the Commissioner and the Deputy Commissioners to summon witnesses, receive evidence on oath, and require the production of documents for the purposes of the Act.

Each State is divided into districts, each of which is placed in charge of a Registrar, whose duties consist in receiving and investigating pension claims and in keeping such books and registers as are required for carrying out the provisions of the Act.

5. Pension Age.—For an old-age pension the age qualification is similar to that previously in force in New South Wales under the State Act, viz., attainment of the age of sixty-five years, or, in the event of permanent incapacitation for work, attainment of the age of sixty years. The Act also provides that the age qualification for women may be fixed by proclamation at sixty years instead of sixty-five. This proclamation was made on the 19th November, 1910, the first payments thereunder being made on the 15th December, 1910. For an invalid pension the age qualification is attainment of the age of sixteen years if accompanied by permanent incapacitation for work.

6. Length of Residence.—In the original Act of 1908 the residential qualification for an old-age pension was the same as that of the New South Wales Act, viz., continuous residence for twenty-five years. Owing, however, to the fact that in the other two States in which pensions were payable under the State régime the residential qualification was only twenty years, an amendment of the Act was passed by the Federal Parliament in August, 1909, reducing the Commonwealth term to twenty years also, thus rendering impossible the chance of lapse of pension through transfer from State to Commonwealth. For an invalid pension continuous residence for at least five years is required. In neither case, however, is continuous residence in Australia deemed to have been interrupted by occasional absences not exceeding in the aggregate one-tenth of the total period of residence. The applicant for any pension must be residing in Australia on the date when he makes his claim, and in the case of an invalid pension must have been incapacitated while in Australia.

7. Rates of Pension.—The rate of pension payable, whether for old age or invalidity, is required by the Act to be determined by the Commissioner or one of the Deputy Commissioners, and is to be fixed at such amount as he deems reasonable and sufficient, having regard to all the circumstances of the case, but must not exceed £26 per annum in any event, nor be at such a rate as will make the pensioner's income, together with pension, exceed £52 per annum.

8. Limitations in respect of Income and Property.—With a view to restricting the pensions to persons actually needing assistance, provision was made in all the State Acts reducing the payment when the applicant already possessed income or property above a given amount. This principle is also embodied in the Commonwealth Act. In the case of independent income it has already been mentioned that the pension payment must be so modified that the aggregate income, inclusive of pension, does not exceed £52 per annum. Payments received by way of benefit from any registered friendly society, or during illness, infirmity, or old age from any trade union, provident society, or other society or association, are not, for the purposes of the Commonwealth Act, treated as income. As regards accumulated property, the pension is subject to a deduction of £1 per annum for every complete £10 by which the net capital value of the property exceeds £50. Also, if both husband and wife are pensioners (except when they are living apart pursuant to any decree, judgment, order, or deed of separation), the deduction in the case of each of them shall be £1 for every complete £10 by which the net capital value of the accumulated property exceeds £25. From the capital value of accumulated property is deducted the capital value of a home in which the pensioner permanently resides, and all charges and encumbrances existing on the property, other than the home. Accumulated property whether in or out of Australia, to the value of £310 or upwards will disqualify for a pension, as will also an applicant's direct or indirect deprivation of himself of such property with the object of obtaining a pension. In the case of husband and wife, except where they are living apart pursuant to any decree, judgment, order or deed of separation, the net capital value of the accumulated property of each is deemed to be half the total net capital value of the accumulated property of both, and the amount of property in such case allowed prior to deduction is £50 if including, and £25 if not including a home.

9. Character of Applicant for Pension.—In all the State Acts provision was made that the recipients of old-age pensions should be persons of good moral character, and, in New South Wales and Victoria, imprisonment for extended periods would act as a disqualification. In the Commonwealth Act it is also provided that "no person shall receive an old-age pension unless he is of good character," but a similar provision is not made in the case of invalidity.

10. Number of Commonwealth Claims and Old-age Pensions.—During the first year of practical working of the Commonwealth Act, viz., that ended 30th June, 1910, the number of cases considered was 76,168. Of these 39,875 were cases in which a State old-age pension was exchanged for one payable by the Commonwealth. The remaining 36,293 were new applications received during the year, of which 30,526 were granted, 3921 were rejected, and 1846 were still in course of consideration on 30th June, 1910. During the year ending 30th June, 1911, a further number of 20,260 were considered.

Details of the several States as at 30th June, 1913, are as follows :—

COMMONWEALTH OLD-AGE PENSIONS, YEAR ENDED 30th JUNE, 1913.

	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	C'w'lth.
Claims examined during year ending 30th June, 1913 ...	4,559	3,896	1,986	1,147	573	593	12,754
Claims rejected ...	526	441	405	15	63	...	1,450
Claims granted ...	4,033	3,455	1,581	1,132	510	593	11,304
Transfers from other States ...	255	196	66	92	91	32	732
Existing 30th June, 1912 ...	29,668	24,449	10,436	7,289	3,224	4,005	79,071
	33,956	28,100	12,083	8,513	3,825	4,630	91,107
To be deducted—							
Deaths ...	2,459	2,239	685	614	220	340	6,557
Cancellations, and transfers to other States ...	628	427	177	147	121	107	1,607
	3,087	2,666	862	761	341	447	8,164
Old Age Pensions existing on 30th June, 1913 ...	30,869	25,434	11,221	7,752	3,484	4,183	82,943

11. **Sexes of Old-age Pensioners.**—Of the 82,943 persons in receipt of pension at 30th June, 1913, 36,010 (or 43 per cent.) were male, and 46,933 (or 57 per cent.) were female. Details for the several States are as follows:—

SEXES OF PENSIONERS, 30th JUNE, 1913.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	14,078	16,791	30,869	83.84
Victoria ...	10,317	15,117	25,434	68.25
Queensland ...	5,415	5,806	11,221	93.26
South Australia ...	3,005	4,747	7,752	63.30
Western Australia ...	1,669	1,815	3,484	91.95
Tasmania ...	1,526	2,657	4,183	57.43
Total ...	36,010	46,933	82,943	76.73

* Number of males to each 100 females.

12. **Ages and Conjugal Condition of Old-age Pensioners Admitted during 1912-13.**—The recorded ages of the 11,304 persons to whom pensions were granted during the year 1912-13 varied considerably, ranging from 1380 at age 60 to 1 at age 93. Particulars for quinquennial age groups are as follows:—

AGES AND CONJUGAL CONDITION OF PENSIONERS ADMITTED DURING 1912-1913.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed	Total.	Single.	Married.	Widowed	Total.	
60-64 ...	89	202	59	350	510	1,437	1,606	3,553	3,903
65-69 ...	556	1,634	576	2,766	194	596	824	1,614	4,380
70-74 ...	240	526	265	1,032	76	264	430	770	1,802
75-79 ...	90	201	149	440	25	98	262	385	825
80-84 ...	14	57	66	137	11	23	109	142	279
85-89 ...	6	15	28	49	...	12	39	51	100
90-94 ...	1	3	4	8	...	2	5	7	15
Total ...	996	2,638	1,148	4,782	816	2,431	3,275	6,522	11,304

13. **Commonwealth Claims for Invalid Pensions.**—The situation as at 30th June, 1913, was as follows:—

COMMONWEALTH INVALID PENSIONS.—YEAR ENDED 30th JUNE, 1913.

	N.S.W.	Vic.	Q.	S.A.	W.A.	Tas.	Total C'wealth.
Claims examined during year ending 30th June, 1913 ...	2,010	1,588	825	396	286	431	5,536
Claims rejected ...	406	407	177	49	54	54	1,147
Claims granted ...	1,604	1,181	648	347	232	377	4,389
Transfers from other States ...	27	16	7	13	8	7	78
Existing 30th June, 1912 ...	4,827	3,162	989	707	374	704	10,763
	6,458	4,859	1,644	1,067	614	1,088	15,230
Deduct—							
Deaths ...	450	358	111	89	24	78	1,110
Cancellations and Transfers to other States ...	209	83	23	22	16	28	381
	659	441	134	111	40	106	1,491
Invalid Pensions existing 30th June, 1913 ...	5,799	3,918	1,510	956	574	982	13,739

14. **Sexes of Invalid Pensioners.**—Of the 13,739 persons in receipt of an invalid pension on 30th June, 1913, 6943 or 50½ per cent. were male, and 6796 or 49½ per cent. were female. Details for the several States are as follows:—

SEXES OF INVALID PENSIONERS, 30th JUNE, 1913.

State.	Males.	Females.	Total.	*Masculinity.
New South Wales ...	2,962	2,837	5,799	104.35
Victoria ...	1,881	2,037	3,918	92.34
Queensland ...	851	659	1,510	129.13
South Australia ...	434	522	956	83.14
Western Australia ...	320	254	574	125.98
Tasmania ...	495	487	982	101.64
Commonwealth ...	6,943	6,796	13,739	102.16

* Number of males per 100 females.

15. **Ages and Conjugal Condition of Invalid Pensioners Admitted during 1912-13.**—The recorded ages of the 4389 persons who received invalid pensions in the period under review varied from 16 to 90. The following table gives particulars in decennial age groups after age 20:—

AGE AND CONJUGAL CONDITION OF INVALID PENSIONERS ADMITTED IN 1912-13.

Age at Admission.	Males.				Females.				Grand Total.
	Single.	Married.	Widowed.	Total.	Single.	Married.	Widowed.	Total.	
16-19	125	2	...	127	105	...	...	105	232
20-29	181	35	1	217	251	9	4	264	481
30-39	139	111	5	255	149	25	19	193	448
40-49	151	224	27	402	148	104	104	356	758
50-59	260	445	112	817	176	303	342	821	1,638
60-69	178	302	96	576	23	49	72	144	720
70-79	24	20	25	69	3	4	27	34	103
80 and over ...	...	2	4	6	...	...	3	3	9
Total	1,058	1,141	270	2,469	855	494	571	1,920	4,389

16. **Cost of Administration.**—Under the State régime the cost of administration differed considerably in the several States, and for 1908-9 represented in New South Wales 4.17 per cent. of the amount actually paid in pensions. In Victoria for the same year the corresponding percentage was 0.70. During the year 1912-13 the total cost to the Commonwealth of administering the Old-age and Invalid Pensions Department was £44,523, or nearly 2 per cent. of the amount actually paid in pensions. Details concerning the cost of administration for 1912-13 are as follows:—

	£
Salaries	13,715
Temporary assistance	1,837
Services of magistrates, registrars, clerks of courts, and police ...	5,044
Commission to Postmaster-General's Dept., at 12s. 6d. per £100 paid	13,775
Postage and telegrams	2,843
Other expenses	7,309
	44,523

The actual sum disbursed in Old-age and Invalid Pensions in the financial year 1912-13, apart from the cost of administration, was approximately £2,289,048.

17. **Liability Undertaken in Granting Old-age Pensions.**—As an indication of the extent of the responsibility which an old-age pension scheme involves, it may be mentioned that in connection with the evidence tendered to the Commonwealth Commission on Old-age Pensions a computation was made of the total liability in respect of accrued pensions which the Commonwealth would have incurred if, at 31st March, 1901, the date of the Census, 39 per cent. of the persons aged sixty-five and upwards were entitled to pensions of ten shillings per week. The present value at that date of the liability so computed was £10,415,820. (See Minutes of Evidence of Royal Commission on Old-age Pensions, p. 80.)

The following table gives detailed statistical information concerning the working of the Act since 1st July, 1910:—

INVALID AND OLD-AGE PENSIONS SUMMARY.

Financial Year ended 30th June.	Number of Pensioners.			Amount Paid in Pensions.	Amount Paid to Asylums for Maintenance of Pensioners.	Total Payment to Pensioners in Asylums.	Cost of Administration.	Cost of Administration per £100 paid to Pensioners and Asylums.	Average Fortnightly Pension on last day of Financial Year
	Old-Age.	Invalid.	Total.						
				£	£	£	£	£ s. d.	s. d.
1910	65,492	...	65,492	1,497,330	155	1,497,485	37,146	2 9 7 %	19 1
1911	75,502	7,451	82,953	1,868,648	2,592	1,871,240	39,244	2 1 11 %	19 1
1912	79,071	10,763	89,834	2,148,034	7,447	2,155,481	41,794	1 18 9 %	19 0
1913	82,943	13,739	96,682	2,289,048	13,297	2,302,335	44,523	1 18 8 %	19 6

§ 5. Maternity Allowance.

The Federal Parliament, during the session of 1912, passed an Act (assented to on 10th October, 1912) providing under certain circumstances for the payment of maternity allowances. The scope and main provisions of the Act will be gathered from the following sections and sub-sections, given in full :—

4. "Subject to this Act, there shall be payable out of the Consolidated Revenue Fund, which is hereby appropriated accordingly, a maternity allowance of Five pounds to every woman who, after the commencement of this Act, gives birth to a child, either in Australia or on board a ship proceeding from one port in the Commonwealth or a Territory of the Commonwealth to another port in the Commonwealth or a Territory of the Commonwealth."
5. (1) "A maternity allowance shall be payable in respect of each occasion on which a birth occurs, and the child is born alive, or is a viable child, but only one allowance shall be payable in cases where more than one child is born at one birth."
6. (1) "The maternity allowance shall be payable only to women who are inhabitants of the Commonwealth or who intend to settle therein."
- (2) "Women who are Asiatics or are aboriginal natives of Australia, Papua, or the islands of the Pacific, shall not be paid a maternity allowance."

The following table gives particulars of the working of the Act from 10th October, 1912, when it came into operation, up to 30th June, 1913 :—

STATEMENT SHEWING PARTICULARS OF CLAIMS WITH REGARD TO THE
MATERNITY ALLOWANCE OF £5, FROM 10th OCTOBER, 1912,
to 30th JUNE, 1913.

State.				Granted.	Rejected.	Under Consideration.	Total.
				No.	No.	No.	No.
New South Wales	...	...	...	31,045	291	558	31,894
Victoria	...	...	...	22,796	114	483	23,393
Queensland	...	...	...	12,130	74	188	12,392
South Australia	...	...	...	7,589	52	118	7,759
Western Australia	...	...	...	5,385	59	236	5,680
Tasmania	...	...	...	3,611	29	46	3,686
Commonwealth	...	...	...	82,556	619	1,629	84,804

The cost of administration for the period under review was £6368 and the amount disbursed in claims was £412,780.

6. Local Option.

1. **General.**—The principles of local option as to the sale of fermented and spirituous liquors have been applied in all the States of the Commonwealth. The last State to adopt these principles was Western Australia, where provision was made for a system of local option by the Licensing Act 1911.

2. **New South Wales.**—The Act in force relating to local option in this State is the Liquor Act 1912, which consolidates the laws relating to publicans, brewers and other persons engaged in the brewing, manufacture or sale of liquor. The local option vote is taken in every electorate on the day fixed for the poll therein at each general election. The option with regard to licenses extends to publichouses, wineshops, and clubs, and the persons entitled to vote are those entered on the Parliamentary electoral rolls. The resolutions to be submitted, and the effects of such resolutions, if carried, are given *in extenso* in previous issues. The first local option vote under the Liquor (Amendment) Act of 1905 was taken at the general election in 1907, and the second at the election in 1910, while the vote in 1913 was taken under the Liquor Act 1912. The following statement shews the number of electorates in which each of the resolutions was carried:—

NEW SOUTH WALES.—EFFECTS OF LOCAL OPTION VOTES, 1907, 1910 and 1913.

Particulars.	General Election, 1907.		General Election, 1910.		General Election, 1913.	
	Electorates.	Votes	Electorates.	Votes.	Electorates.	Votes.
<i>Results in favour of—</i>						
(a) Continuance ...	25	209,384	76	324,973	74	376,793
(b) Reduction ...	65	75,706	14	38,856	15	44,868
(c) No license ...	Nil	178,580	Nil	212,889	Nil	241,402

* One Electorate not available.

3. **Victoria.**—The Acts dealing with the subject of local option as to the sale of fermented and spirituous liquors, and with the compulsory closing of hotels in this State are the Licensing Acts 1890, 1906, and 1907. Other Acts, now repealed, which dealt with the subject, are the Licensing Acts 1876, 1885, and 1888.

The last division of the Act of 1906 relates to the subject of local option; this division, however, does not come into force until the 1st January, 1917. In the meantime, in order to reduce the number of victuallers' licenses in Victoria, a Licenses Reduction Board has been constituted.

(i.) *The Licenses Reduction Board.* Although the operations of this Board are not conducted in accordance with the principles of local option, the duties of the Board are, until the 31st December, 1916, after which date a system of local option comes into force under the Act of 1906, to reduce the number of licenses in excess of the statutory number, and to award compensation according to the scheme provided for by that Act. The Board consists of three members at a salary of £800 per annum each, who may not engage in any business or employment other than the duties of their office as members of the Board. The Board was first appointed on the 21st May, 1907. A Compensation Fund has also been established under the Act, and is raised by means of a compensation fee at the rate of 3 per cent. on the value of liquor purchased by every licensed victualler. The owner of the premises is chargeable with

two-thirds, and the tenant with one-third of the compensation fee. The total amount paid into the Compensation Fund was £48,233 for the year 1907, £48,543 for 1908, £49,300 for 1909, £48,875 for 1910, £51,716 for 1911, £55,275 for 1912, and £58,947 for 1913. When any reduction of licensed premises has been made, the remaining hotels, which will be benefited, are to bear a *pro rata* assessment to make up the amount of license fees lost. The amount so lost up to the end of the year 1913 was £11,680, of which sum £2646 was remitted, and £9034 apportioned among 1852 hotels in proportion to the benefit which, in the opinion of the Board, they will derive from the closing. By an amendment to the Act in 1912, the Board has been given discretion in certain circumstances to allot less than the amount lost. The maximum compensation, which is payable out of the Compensation Fund referred to above, is to be based on the results of the three years preceding the 31st December, 1906, in the case of owners, and of the three years preceding the 31st December, 1905, in the case of licensees. Up to the 31st December, 1913, 710 hotels had been closed by the Board, 198 of this number having surrendered their licenses. In all cases compensation, where claimed, was awarded, the total paid amounting to £344,952, or an average of £486 each. 193 of these hotels were situated in the metropolitan district, while the remaining 517 were in country districts. In one owner's case and 149 licensees' cases no claims for compensation were made. The following table shews particulars of the operations of the Board up to the 31st December, 1913.

VICTORIA.—OPERATIONS OF LICENSES REDUCTION BOARD, 31st DECEMBER, 1913.

Particulars.	Licenses in December, 1906.			Hotels Deprived of Licenses	Compensation Awarded.		Hotels Surrendered.	Compensation Awarded.	
	Number in Existence.	Statutory Number.	* Number in Excess.		Owner.	Licensee.		Owner.	Licensee.
Metropolitan & Suburban Country	1,020	877	401	183	£ 136,999	£ 25,303	10	£ 5,253	£ 1,124
	2,440	1,622	976	329	116,661	18,008	188	37,628	3,976
Total ...	3,460	2,499	1,377	512	253,660	43,311	198	42,881	5,100

* In some districts the number of hotels was below the statutory number: in these districts the total number of hotels less than the statutory number was 418.

No reduction of any licensed premises is allowed in any licensing district in which the number of licensed premises is below the statutory number, but new licenses may, until 1917, be granted in such districts provided that a majority of the electors vote in favour of the increase, and that at least one-third of the number of electors on the roll record their votes. The statutory number varies yearly with the change of the population. The number of hotels below the statutory number in the districts referred to for the year 1913 was 737.

Where a deprivation sitting is held before 30th June the Acts specify that a deprived license expiring on or before the 31st December following shall not be renewed. Where the sitting takes place after 30th June the license may be renewed for a period making in all six months from the first day of such sitting. To avoid difficulties on this score the Board holds its deprivation sittings in the first half of the year and its compensation and re-allotment sittings in the second half. Surrenders take effect on the date fixed by the Board at the time of acceptance.

In addition to those scheduled above, the Board, up to the 25th May, 1914, had deprived 62 hotels of their licenses, of which 2 were surrendered, making a grand total of 772.

In previous issues reference has been made to the methods of procedure to be followed on the coming into force of the system of local option on January 1st, 1917.

4. **Queensland.**—The local option clauses of "The Liquor Act of 1912" provide for the following:—

- (i.) The conditions under which new licenses may be granted until the completion of the business of the Licensing Court in April, 1915.
- (ii.) The continuance of the local option clauses of "The Licensing Act of 1885" until the 31st December, 1915.
- (iii.) The institution of a new scheme, under which electors from and after the year 1916 will have the opportunity of voting every three years on the question of reduction of licenses.

(i.) *New Licenses.* With regard to the granting of "new licenses" from the 1st April, 1913, and until the completion of the business of the Licensing Court in April, 1915, it is provided that no new licensed victualler's or wine seller's or provisional licenses shall be granted, unless at a local option vote of the electors of the local option area in which the premises or proposed premises are situated, a resolution "that new licenses shall be granted in this local option area" has been carried.

If the resolution is carried, the Court may, but need not, grant applications; but if the resolution is not carried, the Court shall not grant any application during the said years in the said local option areas.

The Act of 1912 provided that a local option vote following on an application for a license might be taken in any of the years 1913, 1914, and 1915 in a local option area, but having been taken once should not be taken again during those years in the same local option area. During 1913 a vote was taken in 10 districts on the resolution "that new licenses be granted." In five of these, the resolution was carried, the other five districts declaring against any increase in the number of licenses.

(ii.) *Continuance of Present System until 1916.* With the exception of the third resolution, viz., "that no new licenses be granted," the local option provisions of "The Licensing Act of 1885" remain in full force and effect until the 31st December, 1915, with certain modifications and additions. These will be found fully described in previous issues of the Year Book (see No. 6, p. 1177).

(iii.) *General Local Option.* The first vote may be taken in the year 1916, on the same day as the election of senators takes place, and the vote will be by ballot.

The vote will be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be:—(a) an electoral district, (b) an electoral division of an electoral district, or, (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district.

There must be a separate request for each resolution on which a vote is required to be taken.

The resolutions on which a vote may be taken are:—(a) reduction by one-fourth of the existing number, (b) further reduction by one-fourth of the existing number, (c) further reduction by one-fourth of the existing number, (d) prohibition, and (e) new licenses.

In previous issues of the Year Book (see No. 6, p. 1178) will be found fuller reference to the effect of the carrying of any of these resolutions.

5. **South Australia.**—In this State the subject of local option is now regulated by Part V. of the Licensing Act 1908.

Under this Act, each electoral district for the House of Assembly is constituted a local option district, and each electoral district may be divided into local option districts by proclamation of the Governor. A quorum consisting of 500 electors, or one-tenth of the total number of electors, whichever be the smaller number, in any district may petition the Governor for a local option poll. The persons entitled to vote at the poll are those whose names appear on the electoral roll and who reside in the local option district.

The resolutions to be submitted under the Act, together with the effects such resolutions would have, are set out in detail in previous issues of the Year Book (see No. 6, p. 1179).

Local Option Polls. On the 2nd April, 1910, local option polls were taken under the Act of 1908 in twenty-four districts; the electors in the remaining nine local option districts did not petition for polls. A resolution that the number of licenses be reduced, was carried in only one district, Wallaroo; in the remaining 23 districts a resolution that the number of licenses be not increased or reduced, was carried. At the General Election of the House of Assembly held on the 10th February, 1912, no local option polls were held in any local option district.

6. Western Australia.—The law relating to local option in Western Australia is contained in Part V. (sections 75 to 86) of the Licensing Act 1911, which was assented to on 16th February, 1911, and came into force on the 7th April following. Prior to the passing of this Act there was no provision for any system of local option in Western Australia.

The resolutions to be submitted under the above-mentioned Act and the effect such resolutions would have, are given in detail in previous issues of the Year Book (see No. 6, p. 1180).

The first vote under the Act of 1911 was taken on 26th April, 1911, the main question being confined (as prescribed by the Act when the vote is taken prior to 1920) to a resolution "that the number of licenses be increased," the only other questions submitted being those of State control of new publicans' general licenses and State management throughout all licensing districts.

The following table shows the result of this local option poll:—

WESTERN AUSTRALIA.—RETURN SHEWING THE RESULT OF LOCAL OPTION POLL OF 26th APRIL, 1911.

Result of Local Option Poll.		Do you vote that all new Publicans' General Licenses be held by the State.		Are you in favor of State Management throughout all Licensing Districts.	
Votes given in favor of the number of Licenses in the various districts being increased.	Votes given in favor of the number of Licenses in the various districts not being increased.	Yes	No.	Yes.	No
4,554	17,623	27,007	14,387	26,631	14,944

Under the 1911 Act a second poll was due on 26th April, 1914, but an amending Act was passed in December 1913, continuing the present conditions until April 1915.

7. Tasmania.—In this State the subject of local option is dealt with in Part VI. (sections 72 to 84) of the Licensing Act 1902, as subsequently amended by section 8 of the Licensing Act 1908, which later Act, however, does not come into full operation until the first of January, 1917. Other Acts which formerly dealt with the subject, but now repealed, are the Licensing Acts 1889 and 1890, the Inn Keepers Relief Act 1894, and the Licensing Act Amendment Act 1898. Under the Act of 1902, opposition to the grant of a license may be made (i.) by any resident ratepayer, (ii.) by petition of rate-payers resident in the neighbourhood, or (iii.) by local option poll.

The conditions under which applications may be made to the Licensing Bench opposing the granting of licenses, are set out in detail in previous issues of the Year Book. (See No. 6, p. 1181.)

Local Option Poll. Any number of ratepayers, not less than seven, resident in the neighbourhood of the house in respect of which a provisional certificate or an hotel license has been applied for, may require, by petition lodged with the Clerk of Petty Sessions, that a poll of the ratepayers resident in the neighbourhood be taken upon the question whether such provisional certificate be granted or not. If a majority of the votes taken be against the granting of the certificate the Licensing Bench must refuse to grant it.

Particulars as to operations under Part VI. of the Act are not available.

§ 7. Preferential Voting.

In previous issues of the Year Book, a description in detail has been given of the systems of preferential voting now in force in the States of Victoria, Queensland, Western Australia and Tasmania. It is not intended to repeat the description in the present issue.

§ 8. Valuation of Commonwealth Production.

The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connection with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. In the case of manufactories, prior to 1909, five of the States collected statistics of the value of production, while for the sixth State, Tasmania, an estimate has been prepared which it is believed gives a fair approximation. The returns given in the following table are fuller and more approximate than those which have been given previously, and the returns collected in 1909 and subsequent years, however, may be taken as substantially correct. The table hereunder shews the approximate value of the production from all industries during the years 1906 to 1912 :—

ESTIMATED VALUE OF PRODUCTION FROM INDUSTRIES, 1906 to 1912.

Year	Agriculture	Pastoral.	Dairy, Poultry, & Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.*	Total.
	£1000	£1000.	£1000.	£1000.	£1000.	£1000.	£1000.
1906 ...	25,349	45,389	13,611	4,879	26,622	33,205	149,055
1907 ...	30,500	50,660	15,584	4,826	28,301	36,155	166,026
1908 ...	37,150	47,259	15,045	4,286	24,580	36,637	164,957
1909 ...	41,056	50,864	15,064	4,462	23,039	39,718	174,198
1910 ...	39,752	56,993	17,387	4,789	23,215	45,598	187,734
1911 ...	38,774	50,725	19,107	5,728	23,480	50,767	188,581
1912 ...	45,754	51,615	20,280	6,432	25,629	57,022	206,732

* These amounts differ from those given in Section XIII., Manufacturing Industries, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

The total production from all industries during 1912 was £206,732,000, equal to an average of £44 10s. 2d. per inhabitant.

In Year Books Nos. 1 to 5 will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by Customs Department of collection of statistics of interstate trade.

§ 9. Norfolk Island.

1. **Area, Location, etc.**—Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude $29^{\circ} 3' 45''$ south, longitude $167^{\circ} 58' 6''$ east. Its total area is 8528 acres, the island being about 5 miles long and 3 miles wide. From Sydney it is distant 930 miles, and from New Zealand 400 miles. The coast line is 20 miles, and its form that of an irregular ellipse. Except on the south-west, inaccessible cliffs rise from the water's edge. The climate is equable, and the average annual rainfall 43 inches.

2. **Settlement.**—The first colonisation, in 1788, was by Lieutenant King, who in H.M.S. *Sirius* established a small penal station as a branch settlement of that at Port Jackson. The settlement was abandoned in 1806, and thence for 20 years its chief use was as a whaling station and place of call for British warships.

From 1826 to 1855 it was again made a penal station. In 1844 it was annexed to Van Diemen's Land (Tasmania).

The descendants of the *Bounty* mutineers having become too numerous to subsist on Pitcairn Island were removed thence to Norfolk Island in 1856. The new community numbered 193, 94 males and 99 females, and were the descendants of British sailors and Tahitian women.

In 1856 the island was severed from Tasmania, and created a distinct and separate settlement under the jurisdiction of New South Wales. In 1897 it was made a dependency under the Governor of that Colony, and is now administered by the Chief Secretary's Department through a resident Chief Magistrate, in whom is vested the executive government of the settlement, and the penal supervision of its affairs. In 1913, however, a Bill was passed by the Federal Parliament providing for the taking over of the Island as a territory of the Commonwealth. The Act will come into force on July 1st, 1914. The Island will then be administered by the Department of External Affairs, through an Administrator and Chief Magistrate.

3. **Population.**—The census population (3rd April, 1911) was 568 males, 417 females, total 985.

4. **Production, Trade, etc.**—In 1913 the imports from the Commonwealth were valued at £7612, the exports at £1127. The chief articles sent to the Commonwealth were skins, £338; oils £277; raw coffee, £147. There is little other production. A monthly steam service is maintained with Sydney; other communication is irregular. The "all red" cable from Great Britain *via* Vancouver, Fanning Island and Fiji, bifurcates at Norfolk Island, one line connecting with New Zealand, the other with Brisbane.

5. **Social Condition.**—Education is free and compulsory, and there is a public school under the State Department of Public Instruction, and with standards corresponding to the State public schools.

The magistrate's court has criminal jurisdiction in all crimes except capital offences, civil jurisdiction in all matters, and authority to grant probate and letters of administration.

Dealings with Crown lands are in the hands of the Governor alone.

§ 10. Lord Howe Island.

1. **Area, Location, etc.**—Between Norfolk Island and the Australian coast is Lord Howe Island in latitude 31° 30' south; longitude 159° 5' east. It was discovered in 1788. The total area is 3220 acres, the island being seven miles in length and from one half to one and three-quarter miles in width. It is distant 436 miles from Sydney. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2840 feet. The climate is mild and the rainfall abundant.

2. **Settlement.**—The first settlement was by a small Maori party in 1853; afterwards a colony was settled from Sydney. Constitutionally it is a dependency of New South Wales, and is supervised by a visiting magistrate.

3. **Population.**—The population at the Census of 3rd April, 1911, was 56 males, 49 females, total 105.

4. **Production, Trade, etc.**—The principal product is the seed of the native or Kentia palms. A monthly steamship service is maintained with Sydney. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 11. Some Native Australian Fodder Plants.

In Year Book No. 6, p. 1190, will be found an article on "Some Native Australian Fodder Plants," by J. H. Maiden, Esq., F.L.S., Director of the Botanic Gardens, Sydney. It is not intended to reproduce the article in the present issue of the Year Book.

§ 12. Interstate Conferences.

1. **Premiers' Conference, 1914.**—In March, 1914, a conference of State Premiers was held in Melbourne, at which a number of matters of interstate interest were discussed. On the subjects of Uniform Railway Gauge, Electoral Uniformity, and other questions affecting both Commonwealth and States, the Commonwealth was represented at the Conference by the Prime Minister and other Members of the Commonwealth Cabinet. The following is a summary of the resolutions agreed to:—

Dominions Housing. Resolved: That this Conference approves of the proposal to provide accommodation for the housing of the Oversea Dominions upon the Aldwych site in London.

British Science Association (Railway Passes and Hospitality generally). Resolved: That, in the opinion of this Conference, the amended proposals of the Commonwealth relating to the British Science Association should be concurred in by the States.

Uniform Standards for Foods and Drugs. Resolved: That, in the opinion of this Conference, uniform legislation or regulation in pursuance of the decision of the Conference of June, 1913, on Uniform Standards for Foods and Drugs, should be approved by each State as early as practicable.

*Panama Exposition—Representation *ai*.* Resolved: That this Conference approves the representation of Australia at the Panama Exposition, and urges the co-operating States to forthwith appoint their Commissioners.

Uniform Railway Gauge. Resolved: That the States agree to refer to the Interstate Commission the question of a uniform railway gauge for Australia for report whether it is desirable to adopt a uniform railway gauge; and, if so, when and what gauge should be adopted.

And, further, that the Commonwealth and the States agree to refer to the said Commission the following questions:—

1. What benefits will result—(a) to the Commonwealth; (b) to each of the States?
2. What will be the cost of the conversion?
3. In what manner and to whom shall such cost be apportioned?

Transferred Properties Questions—(A) Payment by Commonwealth for Services rendered by States. Resolved: That this Conference affirms the principle that services rendered to the Commonwealth by the States, and *vice versa*, should be paid for.

Transferred Properties Questions—Payment of Interest on Transferred Properties from the Date of such Transfer to the Commonwealth. Resolved: That this question be referred to a Committee of the legal members of the Conference for consideration and subsequent report to the Conference.

Resolved: That, whilst the Conference considers that on a strict interpretation of section 89 of the Constitution Act, under which the Commonwealth is apparently acting, the Queensland Government is unable to effectively assert a claim for interest for the period prior to the commencement of the present financial arrangements, it feels that the claim is worthy of favorable consideration.

Transferred Properties Questions—Payment of Capital Money for Transferred Properties. Resolved: That arrangements for the settlement of the capital debt on transferred properties should be made without delay by the Commonwealth to the States.

Transferred Properties Questions—Re-transfer of Properties from the Commonwealth. Resolved: That, in the opinion of this Conference, the re-transfer of properties transferred under section 85 of the Constitution should not be accepted by the States, except by mutual agreement between the States and the Commonwealth.

States Savings Banks in relation to the Commonwealth Savings Bank. Resolved: That, in order to terminate the disadvantages arising from the competition between the States Savings Banks and the Commonwealth Savings Bank, and secure the advantages which will follow upon an increased recognition of the national character of the Commonwealth Bank, it is resolved that in consideration of the Commonwealth Bank withdrawing from the Savings Bank business the States are willing to allow the Savings Bank deposits now held by the Commonwealth Bank to remain on fixed deposit with the Commonwealth Bank, and to become responsible, through their Savings Banks or otherwise, for the repayment of such deposits, and will further undertake at their earliest convenience and as far as practicable to transact their State banking business with the Commonwealth Bank.

Resolved: That, with a view to the early completion of such an agreement, the State Treasurers should confer with the Commonwealth Treasurer as early as possible.

Relation of Commonwealth to Immigration; and Assistance that may be arranged with the States. Resolved: That the various immigration questions on the agenda paper be referred to the available immigration experts of the States for consideration and subsequent report to the Conference.

Electoral Uniformity between the Commonwealth and States. Resolved: That the proposals of the Commonwealth Government relating to electoral uniformity be referred to the Governments of the States for early consideration and decision.

State Debts—Transfer of. Motion: That this Conference declares its readiness to co-operate with the Government of the Commonwealth in effecting an early transfer of the debts of the States, upon the conditions suggested by the Federal Treasurer, with the following amendments, viz.:—

1. That the entire control and management of future conversion and new loan transactions of the Commonwealth and the States be placed in the hands of a National Debts Commission of five members, two appointed by the Commonwealth, and three by the States; and
2. That existing sinking or redemption funds be not transferred to the Commonwealth.

Resolved: That the debate on this motion be adjourned, and that the proposals referred to therein be referred to a Treasurers' Conference.

Ocean Lights and Marine Marks in Australia. Resolved: That the proposals of the Commonwealth Government relating to ocean lights and light dues be referred for the early and serious consideration of the respective Governments of the States.

Gold Coinage—Assumption of Control by Commonwealth. Resolved: That this Conference approves of taking over the Mint and of gold coinage by the Commonwealth—the States of New South Wales and Victoria to compensate, on an equitable basis, the State of Western Australia.

Opening up another English Port. Resolved: That the States as a whole cannot agree at this stage. It is suggested that the matter be further considered by New South Wales, Victoria, and South Australia.

Resolved: That the States co-operate in the endeavour to establish new services with the Eastern ports of the United States of America, and that all necessary inquiries be made to this end.

Issue of Passes to Officers accompanying Ministers. Resolved: That Ministers visiting other States on public business at other than Conference times to be entitled to pass one public officer over the railways free of charge, and during Conference times officers accompanying Ministers to receive passes.

Railway Passes to Delegates to Conferences of the Blind. Resolved: That the States approve of the issue of passes for four (4) representatives of each State for annual conferences.

Bulk Handling of Grain. Decided that the question of bulk handling of grain cannot be the subject of a resolution.

Representation of the Commonwealth at the Royal Scottish Arboricultural Society's Diamond Jubilee. Resolved: That the States do not desire to be represented at the Scottish Arboricultural Diamond Jubilee, to be held in June, 1914.

International Exhibitions. Resolved: That the Convention recommendations be approved.

Uniform Valuations for State, Municipal, and Commonwealth purposes. Resolved: That the Conference affirms the desirability of uniform valuations for Commonwealth and State purposes being adopted as early as practicable, and that the necessary legislative or administrative steps in that direction be taken by the States.

Border Migration. Resolved: That, in the opinion of this Conference, the New South Wales and Victorian Governments should be urged to continue existing arrangements for the checking of border migration at Albury.

Imperial Timber Bureau in London—Establishment of. Resolved: That, in the opinion of this Conference, the time is not ripe for concerted action in connexion with the proposed Imperial Timber Bureau in London.

Quinquennial Census. Resolved: (1) That, in the opinion of this Conference, the Government of the Commonwealth should be urged to take, in the year 1916, an interim census limited to name, locality, and sex, as recommended by the conference of State Statisticians.

(2) That the attention of the Prime Minister be drawn to the estimate furnished by the New South Wales Statistician of the cost of such a census, viz., £65,000 approximately.

Interstate Trade Statistics. Resolved: That, in the opinion of this Conference, the Commonwealth Government should be urged to resume the collection of statistics of interstate trade.

Railway Passes to ex-Ministers of Commonwealth. Resolved: That, in the opinion of this Conference, the granting of passes to ex-Ministers of the Commonwealth should be made the subject of arrangement between the Commonwealth Government and the States in each individual case as it arises.

Present System of Issuing Railway Passes to Wives of Members of Parliament. Resolved: That, in the opinion of this Conference, the issue of free passes in favour of the wives of members of other State Parliaments should cover sleeping-berth accommodation.

Recommendations of Conference of State Commissioners of Taxation. Resolved: That the Conference cannot see its way to finally deal with the recommendations of the Interstate Commissioners of Taxation in respect of double payment of income tax, but recommends the matter to a conference of State Treasurers to be held before the assembling of the next Premiers' Conference.

Precedence of British Naval Officers (case of Admiral Patey). Resolved: That, in the opinion of this Conference, the matter of precedence to be granted to British naval officers commanding on the Australian station is one to be determined by His Majesty's representatives in each individual State.

Uniform Company Law. Resolved: That, in the opinion of this Conference, it is desirable there should be a uniform Company Law throughout the Commonwealth, and that this law should follow the English Companies Act as far as practicable.

The Attorney-General of New South Wales to forthwith prepare a Bill for submission to the Attorneys-General of each State, with a view to its early enactment in each of the States.

American Meat Trust. Resolved: That the States respectively continue inquiries into the alleged existence and effects of a Meat Combine in Australia, and also continue to consult together and interchange information thereon, and, if necessary, take combined legislative action to regulate the operations of the alleged and similar trusts.

Jewellery—Hall Marking of. Resolved: That, in the opinion of this Conference, it is desirable that the States should make proper provision for the hall-marking of gold and silver jewellery by uniform legislation in each of the States.

The Attorney-General of South Australia to forthwith prepare a Bill for submission to the Attorney-General of each State, with a view to its early enactment in each of the States.

Gold Buyers—Uniform Legislation re. Resolved: That it is desirable there should be uniform legislation with regard to the purchase and sale of gold, silver, and precious stones throughout the Commonwealth, and that such legislation should follow the Acts of Western Australia and Victoria.

The Attorney-General of Victoria to forthwith prepare a Bill for submission to the Attorneys-General of each State with a view to its early enactment by each of the States.

Compulsory Acquisition of Crown Lands by Commonwealth. Resolved: That the States object to the exercise of compulsory powers for the acquisition by the Commonwealth from the States of Crown lands.

Footwear Regulation. Resolved: That it is desirable there should be uniform legislation with regard to the manufacture and sale of footwear throughout the Commonwealth, and that the Law Officers of New South Wales and Victoria consult together and prepare a Bill to regulate such manufacture and sale for submission to the Parliaments of all the States. The conduct of such matter to be with New South Wales.

Double Probate Duties. Resolved: That this Conference is of opinion that double probate or succession duties should not be charged upon the estates of the deceased persons, and that the Commissioners of Taxes be requested to complete their inquiries with regard to the principles on which personal property is assessable to death duty. On completion of such inquiries it be left to the Attorney-General of Queensland to prepare and circulate suggested legislation for introduction in the various State Parliaments.

Interchange of Powers and Reciprocal Assistance by Masters-in-Lunacy of the several States. Resolved: That the several States pass legislation whereby the Lunacy Authority in the State in which a lunatic has property be empowered, at the request of the Lunacy Authority of a State in which the lunatic is confined, to deal with such property.

Consular Appointments. Resolved: That the practice in regard to the Consular appointments in the States which obtained, prior to 1911, under which the State Ministry took full responsibility in connexion with these appointments, be adhered to.

Relation of Commonwealth to Immigration; and Assistance that may be arranged with the States. Resolved: That this Conference has received with gratification the intimation made by the Commonwealth Government of its readiness to contribute a sum of £150,000 per annum to further the interests of immigration. Having regard to the various matters of policy, which will require to be considered in detail, the Conference agrees that the matter should form the subject of correspondence between the States, initiated by the Premier of New South Wales, as to the lines which should be adopted to allocate a definite function to the Commonwealth, as desired by the Prime Minister.

Medical Inspection of Immigrants. Resolved: That this Conference is of opinion that the regulations relating to the medical inspection under the Immigration Acts 1901-12, as proposed by the Commonwealth Government, will operate to impede the work of recruiting immigrants in Great Britain and elsewhere, and strongly urges that they should be modified in the directions which have been recommended by the Agents-General in consultation with States' emigration representatives in England; with the additional safeguard of a more rigorous examination of passengers at the port of embarkation by medical referees, to be appointed by the Commonwealth Health Bureau in Great Britain.

Duty on Imported Superphosphates. Resolved: That, whilst sympathising with the views of the South Australian representatives, this Conference feels that the question raised is one purely for the consideration of the Federal Parliament.

Treasurers' Conference—Date of Meeting. Resolved: That the convening of a conference of State Treasurers as early as possible be entrusted to the Premier of New South Wales.

2. Murray River Waters Conference.—On the occasion of the Premiers' Conference referred to above, the Premiers of New South Wales, Victoria, and South Australia, together with the Prime Minister of the Commonwealth, entered into the following agreement relative to the Murray River Waters. (See also p. 510.)

Resolutions agreed to by the Prime Minister of the Commonwealth of Australia and the Premiers of the States of New South Wales, Victoria, and South Australia:—With a view to the economical use of waters of the River Murray and its tributaries, for irrigation and navigation, and to the reconciling of the interest of the Commonwealth and the riparian States, it is resolved that an agreement between the Commonwealth and States of New South Wales, Victoria, and South Australia (herein called "this Agreement") be entered into, providing:—

(i.) That a system of storages be provided at Cumberoona or some other suitable site on the Upper Murray and at Lake Victoria, and that weirs and locks be constructed in the course of the River Murray from its mouth to Echuca; in the River Murrumbidgee from its junction with the River Murray to Hay, or alternatively to works in the River Murrumbidgee, an equivalent extent of weirs and locks in the River Darling, extending upstream from its junction with the River Murray.

(ii.) That the cost of the undermentioned works required to give effect to Resolution (i.), and estimated as follows:—

Nine weirs and locks from Blanchetown to Wentworth	...	£365,000
Seventeen weirs and locks from Wentworth to Echuca	...	1,700,000
Nine weirs and locks from the junction of the Rivers Murray and Murrumbidgee to Hay, or alternately an equivalent amount (£540,000) in locks and weirs from the junction of the River Darling with the River Murray upstream	...	540,000
Upper Murray storage	... ..	1,353,000
Lake Victoria storage	... ..	205,000
		£4,663,000

be borne to the extent of £1,000,000 by the Commonwealth, and as to the remainder in equal shares by the States of New South Wales, Victoria, and South Australia.

(iii.) That, if so desired by the State of New South Wales, there shall be substituted for the proposed weirs and locks in the River Murrumbidgee locks and weirs to the same estimated cost in the River Darling upstream from its junction with the River Murray.

(iv.) That the flow of the River Murray at Albury, including the natural or regulated flow of the Rivers Mitta and Kiewa, and as regulated by the Cumberoona storage, be shared equally by New South Wales and Victoria, subject to any quantity hereby agreed to be sent down the river for riparian use and for supply to South Australia.

(v.) That New South Wales and Victoria each have full use of her own tributaries below Albury, and have the right to store and divert the flows thereof, or alternatively, equivalent volumes from the River Murray below their affluences subject to provision from such tributaries, or her share of the flow at Albury, or both, of contributions towards the share hereby allotted to South Australia, and the allowance for riparian use on the main stream from the affluence of such tributary, or from Albury to Lake Victoria.

(vi.) That the proportion of the contribution by New South Wales and Victoria to the share hereby allotted to South Australia, and for riparian use in the main stream, be that which the mean natural flow of the tributaries of each State below Albury measured at the points of affluence with the River Murray, with half the actual mean flow at Albury added in each case bear to each other. In calculating the mean flow of the River Darling for this purpose a deduction shall be made to the extent of any water diverted by the State of Queensland.

(vii.) That the minimum quantity to be allowed to pass to South Australia in each year be sufficient to fill Lake Victoria storage once, and in addition to maintain, with the aid of the water returned from Lake Victoria, a regulated supply at Lake Victoria outlet of 134,000 acre feet per month during the months of January, February, November, and December; 114,000 acre feet per month for the months of March, September, and October; 94,000 acre feet per month for the months of April, May, and August, and 47,000 acre feet per month for the months of June and July, these being the provisions for irrigation equivalent to a regulated supply of 67,000 acre feet per month for nine months, and for domestic and stock supply, losses by evaporation and percolation in Lake Victoria, like losses and lockage in the river from Lake Victoria to the river mouth (but not including Lakes Alexandrina and Albert). Provided that these allowances and the allowance to the upstream States be reduced *pro rata* in such abnormal seasons as those of 1902 and 1903.

(viii.) That after the utilization by South Australia for irrigation of the volumes set forth in Resolution (vii.), or after the utilization by New South Wales and Victoria of 1,957,000 and 2,219,000 acre feet per annum respectively, whichever may first happen, a further volume may be allotted out of any surplus over the above specified allotments to the State of New South Wales, Victoria or South Australia, as the case may be, such further volumes to be determined by the Commission provided for herein.

(ix.) That the agreement entered into between the Premiers of New South Wales, Victoria, and South Australia, dated the 12th day of January, 1912, respecting storage works at Lake Victoria and certain works in, on, and near the River Murray, be confirmed, subject, however, to the modifications arising out of this agreement.

(x.) That the cost of any works jointly constructed by the States of New South Wales and Victoria in the River Murray above Echuca, for the purpose of diversion of water allotted to them under this agreement, shall be borne by the States of New South Wales and Victoria in proportion to the volume of water proposed to be diverted into each of said States by such works.

(xi.) That a Commission of four members to be called the River Murray Commission be appointed immediately after the ratifying of this agreement by the Commonwealth and States Parliaments concerned, one commissioner to be appointed by the Governor-General of Australia, one by the Governor of New South Wales, one by the Governor of Victoria, and one by the Governor of South Australia. The Commission shall carry into effect the provisions of this Agreement.

(xii.) That the works provided for in Resolution (ii.) be constructed by the State of South Australia from Blanchetown to Wentworth, by the State of New South Wales on the Murrumbidgee or Darling, as the case may be, and by the States of New South Wales and Victoria on the River Murray, under the direction of the Commission provided for herein and subject to the approval of all designs by the said Commission.

(xiii.) That the construction of the works mentioned in Resolution (ii.) of this agreement shall be commenced by each of the States, as provided in Resolution (xii.), as soon as may be after the ratification of this agreement by the Parliaments of the Commonwealth and the States respectively, and vigorously proceeded with until completion.

(xiv.) And that this agreement be submitted for ratification to the Parliaments of the Commonwealth and the States respectively during the next sessions of the said respective Parliaments, and is subject to such ratification.

3. Treasurers' Conference.—In accordance with the resolution passed by the Premiers' Conference previously referred to, a meeting of State Treasurers was held in Melbourne in May 1914. With reference to the question of the Commonwealth Bank in relation to the States Savings Banks, the following resolution was carried, and subsequently accepted by the Prime Minister on behalf of the Commonwealth:—

Resolved: That with a view to the termination of the present competition of the Savings Banks of the Commonwealth and of the States of New South Wales, Victoria, Queensland and South Australia, on a date to be determined as hereinafter proposed, the following proposals be submitted to the Commonwealth Government:—

- (1) With respect to the States of New South Wales, Victoria, and South Australia, there be transferred to the Commonwealth Bank a share equal to at least 60 per cent. of the current banking accounts of such States at the expiration of the period necessary for the termination of present agreements, this share of the banking business to include a proportionate part of the exchange business, both interstate and London. The remaining 40 per cent. of such business to be transferred upon the Commonwealth Bank undertaking 10 per cent. of the underwriting of new loan flotations if required to do so, and making satisfactory provision for the discharge of the business of the States, in all parts of the States, on terms and conditions as favourable as those existing at present.
- (2) With respect to the four States before named, there be continued with the Commonwealth Bank as fixed deposits, for a period of ten years or a shorter period at the option of the Commonwealth, from the date of the withdrawal of the Commonwealth from Savings Bank business, and thereafter, as mutually agreed upon between the Commonwealth and the individual States, a sum equivalent to the sum held by the Commonwealth Bank as Savings Bank deposits at such date. The interest payable on such deposits by the Commonwealth Bank to each of the respective States to be the interest paid by each State, plus the average working expenses of the Savings Bank of such State.

- (3) With respect to the State of Queensland, which is at present bound by agreement to continue its current account business with the Queensland National Bank until 30th June, 1921, the State to deposit at current rates of interest within 12 months from a date to be fixed, the sum of £250,000 as a further fixed deposit with the Commonwealth Bank, and to increase that sum to a total of £500,000 within three years from such date. In the event of the agreement with the Queensland National Bank being terminated by mutual consent at a date earlier than 30th June, 1921, Queensland to transfer her current account business to the Commonwealth Bank at such earlier date, but, otherwise, on 30th June, 1921. Such transfer to be either 60 per cent., or the total of her current account, in accordance with the arrangements existing between the Commonwealth Bank and the States of New South Wales, Victoria, and South Australia at the time of such transfer, and on completion of such transfer of current accounts such further fixed deposit to be released.

That the foregoing arrangements shall be effectuated by (1) preliminary legislation by the Commonwealth to be brought into operation by proclamation: (2) the necessary steps, administrative and legislative, being thereupon taken by the co-operating States: (3) the competition between the Savings Banks of the Commonwealth and the States ceasing by such proclamation in the four co-operating States concurrently with the transfer of current account business by the three States of Victoria, New South Wales, and South Australia.

ADDENDA.

- (1) The representative of Western Australia did not join in the foregoing resolutions, preferring for the present to seek full partnership between the Commonwealth and the States in all activities of the Commonwealth Bank.
- (2) The representative of Tasmania did not participate, as competition between Commonwealth and State Banks does not exist in that State, but expressed himself on behalf of his Government as willing to consider the resumption of Savings Bank business in the event of the Commonwealth withdrawing therefrom throughout the States.

In conjunction with the Commonwealth Treasurer, the State Treasurers also discussed the question of the Transfer of State Debts, and the following resolution was passed:—

Resolved: (1) That in the opinion of this Conference, the operations connected with the redemption of existing loans and of new flotations are so intimately connected that no scheme of debt transfer would be satisfactory which did not cover both.

(2) That at present no definite conclusion as to the best method of dealing with the transfer of control over future flotations can be formulated, the divergent views of the States being incapable of immediate reconciliation,

(3) That the Conference therefore recommends the matter to the careful consideration of the Federal and State Governments, with a view to further conference.

APPENDIX.

Recent information and returns which have come to hand since the various sections of this book were sent to press, are given hereunder.

SECTION I. STATISTICAL ORGANISATION AND SOURCES OF INFORMATION.

§ 3. Bibliography of Recent Works on Australia (p. 13).

The following work may be added to the list of special publications dealing with Australia:—

MANES, ALFRED.—Der Soziale Erdteil: Studienfahrt eines National-ökonomien durch Australasien. Berlin. E. S. Mittler & Sohn.

SECTION IV. POPULATION.

§ 4. Elements of Growth of Population.

3. Net Immigration, p. 100.—The following table gives particulars of net immigration for the year 1913:—

NET IMMIGRATION,* 1913.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Victoria.	Q'land.	S. Aust.	W.A.	Tas.	North-ern.	Federal	
Arrivals ...	†381,781	301,082	109,310	115,464	37,637	45,883	1,033	†	141,906
Departures ...	†360,071	290,020	98,525	113,441	29,366	45,168	824	†	87,131
Excess of arrivals over departures	†21,710	11,062	10,785	2,023	8,271	715	209	†15	54,775

* Figures for States and Territories represent Interstate, Interterritorial and Oversea migration; those for Commonwealth represent Oversea migration only † including Federal Territory. ‡ Included with New South Wales migration.

5. Total Increase, p. 103.—The following table gives particulars of the total increase in population for each State and Territory and for the Commonwealth during the year 1913:—

TOTAL INCREASE OF POPULATION, 1913.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	North-ern.	Federal	
Excess of births over deaths ...	32,487	20,496	12,948	7,934	6,284	3,755	—12	33	83,925
Excess of arrivals over departures	21,695	11,062	10,785	2,023	8,271	715	209	15	54,775*
Total increase	54,182	31,558	23,733	9,957	14,555	4,470	197	48	138,700

NOTE. — signifies excess of departures over arrivals.

§ 8. Enumerations and Estimates.

5. **Estimates of Population, pp. 114 to 117.**—The following table shews the estimated population of each State and the Commonwealth on the 31st December, 1913 :—

ESTIMATED POPULATION ON 31st DECEMBER, 1913.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W.A.	Tas.	North-ern.	Federal	
Males ...	962,053	706,948	356,613	221,605	180,747	104,476	2,995	1,093	2,536,530
Females ...	869,663	705,171	303,545	218,442	139,937	97,199	677	895	2,335,529
Total ...	1,831,716	1,412,119	660,158	440,047	320,684	201,675	3,672	1,988	4,872,059

SECTION V.

VITAL STATISTICS.

§ 1. Births.

1. **Male and Female Births, p. 145.**—The total number of male and female births registered, and the birth rates per 1000 of the population in each State and Territory and in the Commonwealth, during the year 1913 were as follows :—

BIRTHS AND BIRTH RATES, 1913.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal	
Males ...	26,624	18,434	10,041	6,505	4,710	3,071	27	22	69,484
Females ...	25,562	17,536	9,690	6,122	4,508	2,815	25	22	66,280
Total ...	52,186	35,970	19,731	12,627	9,218	5,886	52	44	135,714
Birth rates ...	28.86	25.82	30.24	29.12	29.36	30.03	14.21	17.97	28.25

§ 2. Marriages.

1. **Marriages, p. 159.**—The following statement shows the number of marriages registered in each State and Territory and in the Commonwealth, and the marriage rates per 1000 of the mean population, during the year 1913 :—

MARRIAGES AND MARRIAGE RATES, 1913.

Particulars.	States.						Territories.		C'wlth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North-ern.	Federal	
No. of marriages	16,307	11,324	5,655	4,094	2,572	1,620	16	6	41,594
Marriage rates*	9.02	8.13	8.67	9.44	8.19	8.27	4.37	2.45	8.66

* Number of marriages, not persons married, per 1000 of mean population.

§ 3. Deaths.

1. Male and Female Deaths, p. 166.—The number of deaths registered in each State and Territory and in the Commonwealth during 1913, and the death rates per 1000 of the mean population, are shewn in the following table:—

MALE AND FEMALE DEATHS AND DEATH RATES, 1913.

Particulars.	States.						Territories.		C'wth.
	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal	
Male ...	11,508	8,495	4,195	2,563	1,852	1,189	53	4	29,859
Female ...	8,191	6,979	2,538	2,130	1,082	942	11	7	21,930
Total ...	19,699	15,474	6,783	4,693	2,934	2,131	64	11	51,789
Death rates...	10.89	11.11	10.39	10.82	9.34	10.87	17.49	4.49	10.78

SECTION VII.

PASTORAL PRODUCTION.

§ 1. Initiation and Growth of Pastoral Industry.

3. Increase in Numbers (p. 275).—The following table shews the estimated number of horses, cattle, sheep, and pigs in the Commonwealth at 31st December, 1913:—

PRELIMINARY FIGURES—LIVE STOCK AT END OF 1913.

States and Territories.			Horses.	Cattle.	Sheep.	Pigs.
New South Wales	...	...	746,377	2,836,801	39,842,518	288,162
Victoria	...	...	562,331	1,528,553	12,113,682	221,277
Queensland	...	...	699,196	5,271,746	21,678,729	138,600
South Australia...	...	...	283,641	352,905	5,073,057	64,119
Western Australia	...	...	155,831	829,489	4,418,402	47,756
Tasmania*	...	...	44,039	222,181	1,862,669	49,152
Northern Territory*	...	...	18,382	405,552	75,808	1,500
Federal Territory	...	...	†	†	†	†
Commonwealth	...	...	2,509,797	11,447,227	85,064,865	810,566

* 1912 figures, number for 1913 not yet available.

† Included with New South Wales figures.

SECTION VIII.

AGRICULTURAL PRODUCTION.

§ 4. Wheat.

1. Progress of Wheat Growing, p. 310.—The following table shews the estimated area under wheat and the prospective yields of wheat in each State and the Commonwealth for the season 1913-14:—

ESTIMATED AREA UNDER WHEAT AND PROSPECTIVE YIELDS, 1913-14.

Particulars.	†	N.S.W.*	Vic.†	Q'land.	†	S. Aust.	W. Aust.	Tas.	C'wlth.
Estimated area ... Acres		3,206,600	2,565,861	132,345		2,267,851	1,104,753	18,054	9,295,464
Prospective yield ... Bush.		38,043,360	32,936,245	2,053,783		16,936,988	13,496,212	421,380	103,887,998
Average yield per acre	„	11.86	12.84	15.52		7.47	12.22	23.34	11.18

* Including Federal Territory.

† Final figures.

SECTION XII. MINES AND MINING.

§ 2. Gold.

2. **Production of Gold at Various Periods, p. 405.**—The Australian gold yield for 1913 is shewn in the subjoined table. The figures are open to final revision, but the totals will not be materially altered :—

GOLD RAISED IN AUSTRALIA, 1913.

Particulars.	States.						Territories.		C'wealth.
	N.S.W.	Vict.	Q'land.	S. Aust.	W. Aust.	Tas.	North- ern.	Federal	
Quantity Fine ozs.	149,657	434,933	263,343	6,545	1,314,044	31,046	3,119	...	2,202,687
Value ...	£ 635,703	1,847,475	1,118,609	27,800	5,581,699	131,876	13,250	...	9,356,412

SECTION XIV. WATER CONSERVATION AND IRRIGATION.

§ 3. Irrigation Plants.

3. **The Murrumbidgee Irrigation Scheme, p. 504.**—It has been decided to concentrate the waterworks on the northern and more compact area of the irrigable land. This will utilise all the water from the reservoir, and enable 250,000 acres to be irrigated as a consolidated area. In addition, the New South Wales Government is acquiring about 1,000,000 acres of non-irrigable land, to be allotted to settlers in conjunction with irrigated farms. It is estimated that the total cost of works and land will be about £5,500,000. When fully settled, the district will comprise about 7000 farms.

The designs for subdivision provide generally for centrally-situated towns, where the commerce of the settlement will be centralised. These townships are surrounded by approximate concentric rings of farms of two, five and ten acres. Outside these are the maximum irrigation farms of from 25 to 50 acres.

The two-acre farms, intended for the most intensive cultivation, have water rights double those of the larger areas. These small farms have a maximum capital value of £75 per acre. This at $2\frac{1}{2}$ per cent. makes an annual rental of £3 15s. for a two-acre farm. The double water right of 24 in. over two acres brings the payment, all told, up to £4 15s. yearly.

In regard to the larger holdings, two of the highest class farms of 50 acres on the Leeton area are valued at £25 at $2\frac{1}{2}$ per cent., but at 5 per cent. the value would be, of course, equivalent to £12 10s. per acre. Some of the land of a more adhesive nature, requiring more cultivation but withal excellent for varied crop production, is put down as low as £12 per acre at $2\frac{1}{2}$ per cent., or £6 at 5 per cent. The Mirrool lands, where the soil is of the very best quality for producing crops under irrigation, the value goes up to £37 at $2\frac{1}{2}$ per cent., or £18 10s. at 5 per cent. A butter factory has already been provided by the Commissioner at Leeton, the township for the Yanco lands. A bacon factory is being designed, the cost for the construction of which has been included on the estimates of Parliament for 1913-14. A demonstration fruit-canning and pulping plant has been established by the Commissioner, and further similar plants are proposed to be installed. A State Demonstration Farm is established on the areas, where various commercial plants are tested as to their suitability for cultivation, while from the State Nursery may be obtained horticultural stocks guaranteed true to name and free from disease.

The following figures shew the progress made up to April, 1914 :—

First farms granted	...	...	...	July, 1912.
Farms granted to date	...	...	...	705
Farms occupied to date	...	...	...	622
Township and village blocks granted	...	...	...	98
Miles road constructed	...	...	...	205
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SECTION XXV.

GENERAL GOVERNMENT.

§ 2. Parliaments and Elections.

1. **The Federal Parliament.**—On 5th June, 1914, the Prime Minister announced that a dissolution of both Houses of the Federal Parliament had been granted by the Governor-General under section 57 of the Commonwealth Constitution Act. This was the first instance of a double dissolution occurring since the Federation of the States on 1st January, 1901. At time of going to press, Parliament was engaged in discussing the question of supply, and the Prime Minister was, consequently, unable to announce the date of the general elections.

SECTION XXVIII.

DEFENCE.

§ 1. Military Defence (p. 946).

3. **Visit and Report by Inspector-General of Oversea Forces.**—In 1914, General Sir Ian Hamilton, Inspector-General of Oversea Forces, visited Australia, and at the request of the Federal Government inspected the military forces and institutions of the Commonwealth. The chief matters noted by the inspecting officer were embodied by him in a report which he furnished to the Government at the end of his tour. Certain suggestions were made regarding phases of the training. Although some saving on present methods is deemed possible in respect of the present situation, the ultimate cost of the Australian army will be double what was originally anticipated. A new business department controlling finance, audit, supply, equipment, transport, remounts, barracks and works, and decentralisation and independence in district commands were advocated in order to simplify correspondence and returns. For maintaining the army in the field, depot cadres with experienced officers and non-commissioned officers were recommended to be established on mobilisation, as well as a reserve of technical and other experts. Emphasis is laid upon the necessity of undertaking the organisation of the nation for war—a matter regarded as quite distinct from the military training of its youth.

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* An index to special articles, etc., appearing in previous issues, is given at the commencement of this book, page viii.

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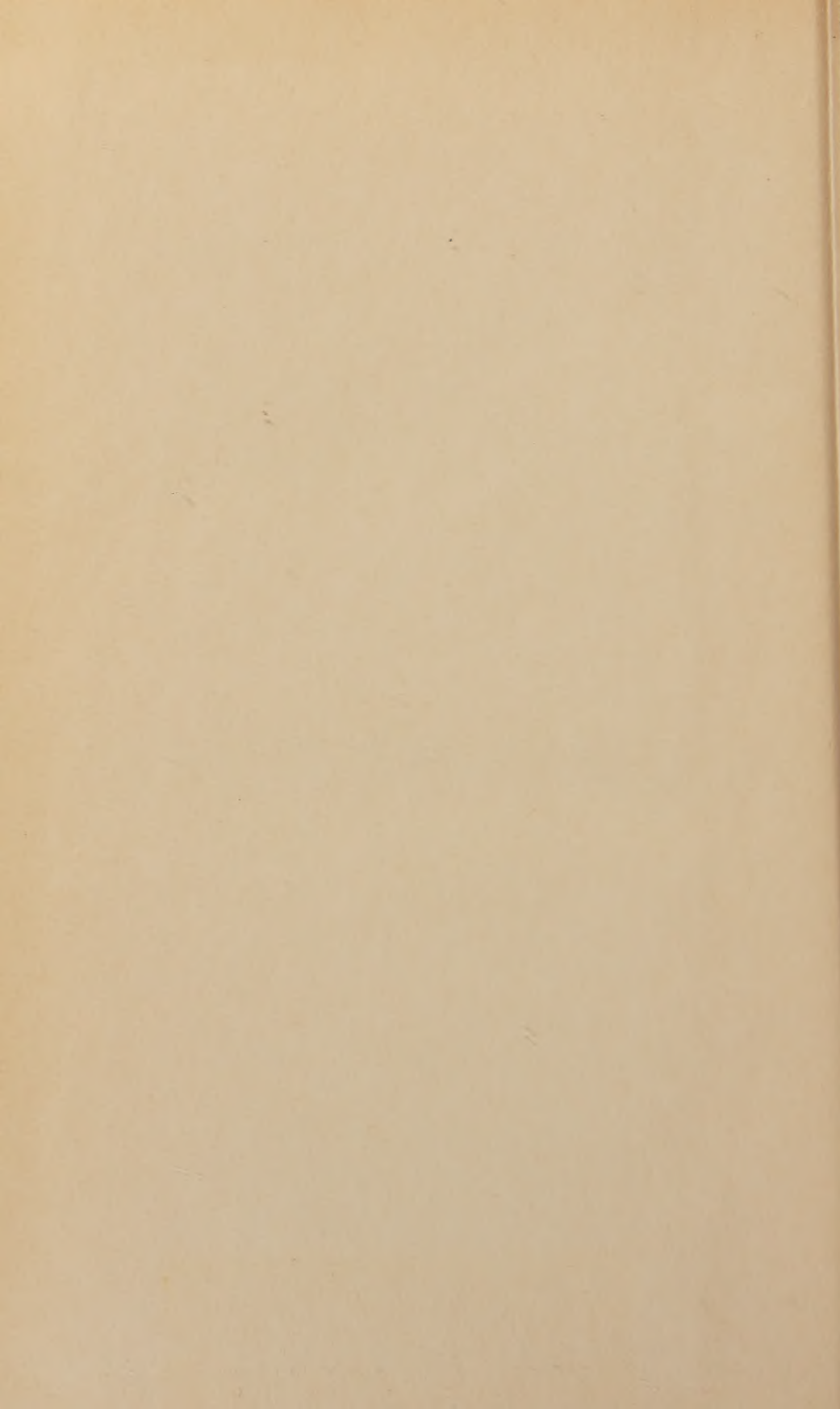
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